

MODEL AIRPLANE NEWS

MARCH 1952 - 25 CENTS

Radio Control
Stunt Plans
Free Flight
Flying Scale



**FROM DISPLAYS
LIKE THIS ON YOUR
DEALER'S COUNTER...**



**...come the best
model airplane cements*
that your money
can buy!**

*** FORMULA "A"**

Extra fast drying for quick, easy construction of light-weight models; also for on-the-spot repairs.

*** FORMULA "B"**

Strongest for balsa or hardwood... for metal to wood... for metal to metal; fast drying.



Testor Chemical Company (WOODWORKING DIVISION) Rockford, Illinois



Have You Tried Hand-Launching?

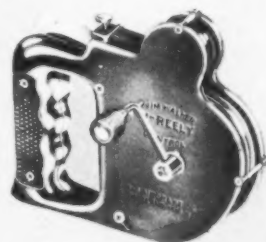
Just imagine the fun and convenience of being able to fly your plane anytime... anywhere... entirely unassisted! With a Jim Walker U-Reely Control you can hand-launch your plane... fly it far out... do aerobatics at a safe altitude... then reel it back into your hand! U-Reely Control makes flying more spectacular and more enjoyable. Your flying lines are kept off the ground and ready for instant use at all times.

Jim Walker U-REELY CONTROL

Precision-made of new high-impact plastic with metal bushings for long life. Compact, sturdy and waterproof. Lightweight — only 11 oz. with flying wires. Brake has new, positive safety lock. Non-slip safety grip handle.

With 120-ft. single strand flying wires..... \$7.50

With 80-ft. 7-strand cable flying lines..... \$8.50



Jim Walker **AJ** AIRCRAFT CO.

1166 N. E. 31st Ave. Portland 12, Oregon



A-J FIREBABY

Comes ready to fly, including flying lines and instructions. 19" span, wt. 3 oz.
\$2.50..... with motor... \$7.50



FUEL REGULATOR

Supplies fuel under pressure in any position until tank is dry! Complete with Pressure Fuel Tank \$2.50



A-J FIREBALL

Original U-Control Plane. . . . High maneuverability. Kit includes control handle, flying lines, wheels... \$6.95

MODEL AIRPLANE NEWS

Serving Aviation 23 Years

MARCH, 1952

VOL. XLVI - No. 3

CONTENTS

CONSTRUCTION

El Diablo	11
Tri Pacer	20
Play Plane	24
Quickies	32
The Javelin, Part II	34

NEWS

Scrap Box	4
Planes in the News	18
AMA News	30

ARTICLES

We Test the All American	16
How to Fly Rubber	26

FEATURES

M.A.N. at Work	1
Air Ways	14
Design Detail	22
Planes Worth Modeling	31
Rich and Lean	38
Twenty Years Ago	40

JAY P. CLEVELAND, President and Publisher
WILLIAM WINTER, Editor
WITTICH HOLLOWAY, Art Director

Contributing Editors: Robert C. Hare, Jim Safrit,
Joseph Nieto

Executive and Editorial Office:
551 Fifth Avenue, New York 17, N. Y.

Advertising Manager, N. E. Slane, 551 5th Ave.,
New York 17; West Coast Adv. Mgr., Justin Hannon,
4068 Crenshaw Blvd., Los Angeles 43, Calif.

Editorial and Business offices: 551 Fifth Ave., New York 17, N. Y. Published monthly by Air Age, Inc., 1140 East West Highway, Silver Spring, Maryland. Jay P. Cleveland, President and Treasurer; Y. P. Johnson, Vice Pres.; G. E. Johnson, Sec. Entered as second class matter Feb. 1951 at the post office at Silver Spring, Md., under the act of March 3, 1879. Additional entry at New York, N. Y. Price 25¢ per copy in U. S. Subscription Rates - Within U. S. only: 1 yr. \$2.50; 2 yrs. \$4.75. In Canada: 1 yr. \$3; 2 yrs. \$5.75. All other parts of the world: 1 yr. \$3.50; 2 yrs. \$6.75. Change of Address - Send to MODEL AIRPLANE NEWS, Subscription Department, 551 Fifth Avenue, New York 17, New York, at least one month before the date of the issue with which it is to take effect. Send old address with the new, enclosing if possible your address label or copy. The Post Office will not forward copies unless you provide extra postage. Duplicate issues cannot be sent.

Copyright 1952 by Air Age, Inc.

1

by
William
Winter



► It is a small world, time flies, and all that stuff, but how small the globe is and how fast the years go by was just brought home by the intrepid Charlie Grant, who was just telling us how he avidly reads Twenty Years Ago, because in February 1932 issue he became editor of M.A.N. For a minute, we thought Charlie had walked out of the fourth dimension. Had noted last month in Twenty Years Ago that Charlie had begun his celebrated series of beginner's models. They were tops as fliers and are as good today as they were then. Aside to stray editors who read this column for tips on ships; Charlie will be doing more so don't go getting ideas!

► Churned through those amazing comments that Joe Nieto sticks on his drawings. Never know what you'll find. Right in the middle of that fine printing on the Robin, Joe tosses off an off-hand mention that he had flown in the very ship in the drawing. Wonder how Joe must have felt when asked to draw not only a Robin, but the very one Gulf had sky-hopped him in.

► Thinking about the high cost of everything reminds us of a story Walker told M.A.N. At Work. Jim took his first hand-made U-Reely handle in to a local hobby shop to show the dealer. What will it cost, asked the dealer. After Jim told him \$7.50, a kid at the counter picked himself up off the floor and said, "Holy Cow." So Jim turned to him and said, "Sonny, would you like to buy this handle?" What-taday want, comes back the kid, and Jim says, "Five thousand dollars. But if you'll meet me here tomorrow at this time, we'll have two of them and I can let you have one at \$2,500." Which points up the terrific development costs to any manufacturer.

► Flying whereabouts really got a kick in the teeth when new home owners took over Curtiss Field. Now we meet guys from all over, even Jersey, at Hicksville, about 30 miles out on Long Island. Next summer, the kind hearted contractor who owns the joint will put up 900 houses. Custer's Last Stand has nothing on us. But everybody is plan-

ning ships a mile a minute for next season. You have to give them credit.

► Remember those diesels from last month's M.A.N. at Work? Finally got one that, beyond doubt, ranks with our hot stuff. Up until now, we have been impressed by the various jobs that Polk's lent us to test. One of them was the ED 2CC Competition Special, about a .12, which we have in our 3-1/2 pound rc. It drives a 10 x 6 Topflite very well. Now the new diesel we want to tell you about is a 1/2cc Albon Dart. That's a displacement of about .03, bigger than the Infant but slightly smaller than the smallest Cub. It turns the prop off our .065 at 12,000 and turns a 7 x 4 at about 9,000-10,000. Reminds you of a Wasp more than anything in its running. Pete Chinn, who does engine articles for Model Aircraft in England (has one coming up on diesels for M.A.N. readers), said he wanted us to see a real diesel. Understand that Elfins, Amcos, are also highly rated like the Albons, but none have strayed into our clumsy clutches so far.

► Stunt men should be in seventh heaven with this issue's El Diablo, one of the few distinctive and different stunt designs that still maintained top-notch performance. "Red" Reinhardt, its designer, is a veteran of eastern circles and needs no introduction to the flip-flop addicts. Don Grout, a mighty finicky test pilot, gives the low down in another of the "We Test" articles on one of deBolt's stunters, the All American.

► Like to tell you about a survey M.A.N. just completed. Three per cent return on such a survey is considered normal. Fifteen is excellent. But you can't hold down M.A.N. readers. Forty odd per cent not only answered our questionnaire but many of those contributed lengthy comments and suggestions, all of which have been faithfully read and noted. The job you guys did—those of you who received the questionnaire—certainly is appreciated. We not only know what engine you bought last but the one you will buy next and we are going to give you the airplanes (Continued on page 8)



It's **GUILLOW'S** for the hottest
JETS
and in-the-news warplanes!

Easy to build **DIE-CUT BALSA** SHELF MODEL KITS



BOEING B-47 STRATOJET



LOCKHEED F-80 SHOOTING STAR



MCDONNELL F2H-1 BANSHEE



N. A. B-45 TORNADO



N. A. F-86 SABRE



VOUGHT F7U CUTLASS



REPUBLIC F-84 THUNDERJET



NORTHROP F-89 SCORPION

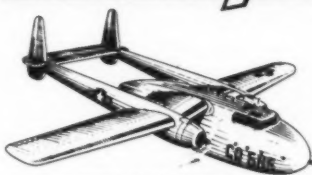


RUSSIAN MIG-13

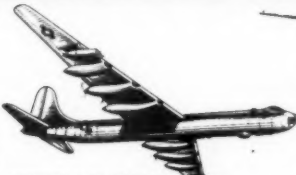


GRUMMAN F9F PANTHER

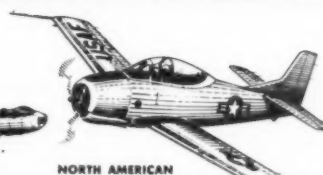
HERE'S 4 BRAND NEW MODELS - EACH A HONEY!



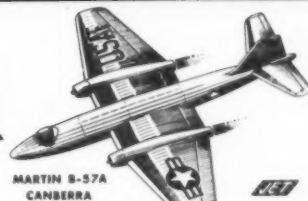
FAIRCHILD C-119 PACKET



CONVAIR B-36 BOMBER



NORTH AMERICAN
T-28 TRAINER



MARTIN B-57A
CANNBERRA

A new Air Force transport that can carry 15 tons of heavy machinery or 65 paratroopers over 1100 miles. Successor to the famous C-82.

America's intercontinental atom bomber. A 10-engined giant capable of attacking European targets from U. S. bases.

Now in service, this newest Air Forces trainer is the first of its kind to feature a tricycle landing gear.

A twin-jet bomber with fighter-like lines. An English-Electric design being built in the U. S. by Glenn L. Martin.

LOOK! MORE FIGHTERS-BOMBERS-HELICOPTERS!



LOCKHEED C-69 CONSTELLATION



BOEING B-29 SUPERFORTRESS



N. A. P-51 MUSTANG



DOUGLAS AD-1 SKYRAIDER



CURTISS P-40 WARHAWK



LOCKHEED P-38 LIGHTNING



REPUBLIC P-47 THUNDERBOLT



VOUGHT F4U-1 CORSAIR



TRANSPORT

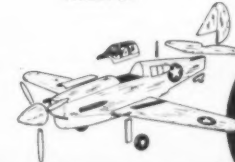


SIKORSKY H-5

SPECIAL Value IN EACH KIT!
PLASTIC CANOPY OR PROP DISKS
WING AND FUSELAGE INSIGNIA

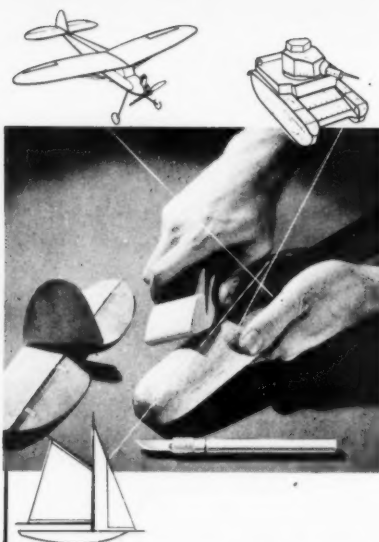
THE DIE-CUT PARTS GO TOGETHER LIKE MAGIC!

See your local dealer for Guillow kits - if not available, send direct to factory adding 15¢ to all mail orders.



ONLY **25¢** EACH

PAUL K. GUILLOW, WAKEFIELD, MASS.



make your **HANDS** **MORE CREATIVE** with **X-acto Knives and Tools**

X-acto precision knives and tools give untrained hands the confidence that makes them creative.

X-acto originates attractive handicraft projects... goals easily accomplished. The finished product gives you the pride of achievement that comes only with doing something well with your hands.

For their hobbies... boat whittling, model airplanes, woodcarving, leathercraft, model railroads or any other handicraft... master craftsmen and hobbyists select "designed-for-the-job" X-acto knives, tools and handicraft kits. X-acto offers the complete line of handicraft knives, interchangeable blades, tools and attractive kits.

From 25¢ to \$30.—at dealers everywhere



No. 86—X-ACTO HOBBY CHEST—\$12.00

Send 15¢ to cover postage
for our new illustrated
28-page Catalog.



x-acto®

X-acto Crescent Products Co., Inc.
440 Fourth Avenue, New York 16, New York

Scrap ... Box

by Jim Saftig

The roving reporter braves California chills to take
in two of the year's biggest model contests.

For team racing you must have a
good fuel shut-off. Top, right, is
Paul White's; other is Les McBrayer's.

► Still trying to thaw out after the *San Bernardino Flying Wheels Annual F.F.* meet, at the Camp Hahn. The field was surrounded by snow capped mountains and a howling wind carried the icy blast right down the nape of our neck.

The first run of flights were mostly O.O.S. in two minutes or less. About one-thirty, the wind took a rest and the lucky ones started thermal riding. The times turned in on the first rounds were very close as the wind and lack of "bumps" left much to be desired. Ed Rominger, President of the *San Diego Aeroneers*, had a tough break when his hand got wound up in a *Mac 49* powered prop. Two choice helpers stepped in to give Ed a hand in the engine starting department, namely, yours truly and Johnny Brodbeck. Whatta crew! In spite of our assistance, Ed didn't get skunked. After a few tongue dragging chases down wind, we went into a huddle in Brodbeck's car to gulp down a couple of cups of hot coffee and discuss the tough engine situation. The facts are still sad, fellows. The 29's and 32's just ain't. The AA's (.020s and .049s) are still fairly plentiful but may not be around too long.

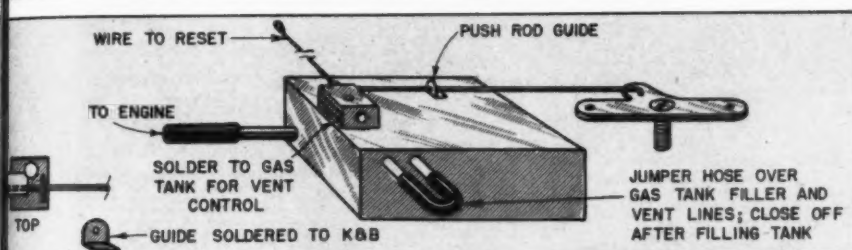
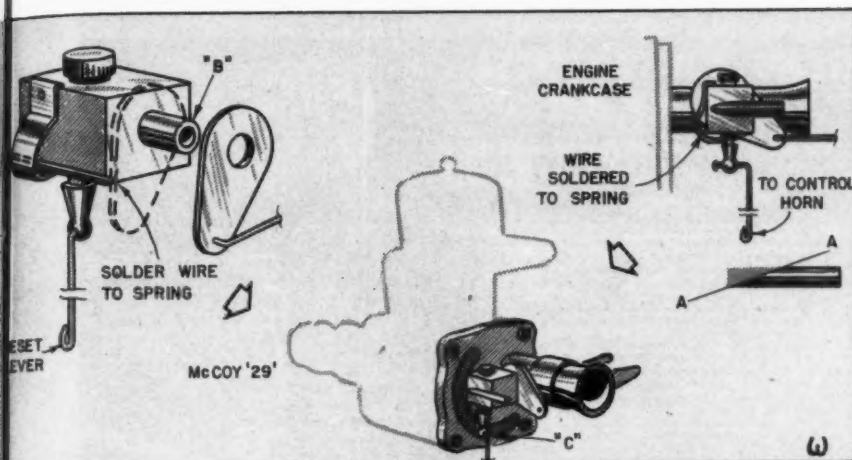
We weren't too surprised to see the larger powerplants lording it over the midgets for the first time in many moons. It could have been because the AA jobs were going over the hill in the wind in about 50 to 80 seconds in the gale that was blowing. Guess the big ships were just right for the weather.

Heard one engine about ready to blow its top. Wondered if it was running with a flywheel or broken prop. Heads went out the car windows just

in time to see Sal Taibi launch his *Torp 29* powered *Streamliner* with the throttle full on. Sal's ship is really a beauty; carried 600 square inches of wing area and incorporates the pop-up stab dethermalizer. The streamlined cowling must have been the inspiration for the name as it is a masterpiece of machine work. Taibi tells us that the split type aluminum cowl, which incorporates grooves for mounts and gear, took about three months of off-and-on work to complete. The "deal" is very rugged and quite light. It was little wonder the engine was screaming as an 8 x 3-1/2 *Top Flite* was in flight position just aft of the spinner. The old maestro, Sal Taibi, showed us that the combination was all he claimed it to be. The torque question was eliminated and plenty of thrust for a fast climb was very apparent. Wonder how long the engine will stay together?

Louis Culler, of AA scale F.F. fame, had quite a time with his swell looking *Torp 19* powered *Zeek*. We think his first flight should hold some kind of record. The climb and recovery were perfect and the glide was perfect geometrically. We mean it was the straightest flight our tired old orbs ever witnessed. The ship tried to prove that the shortest distance between two points was a straight line. A few more flights like that should slim down the old waistline, Louis.

Wally "A.W.O.L." Short C.D.'d the meet and came up, with the help of the club, with some very good time cards. We'd like to see more of this type used at all meets in the future. These cards had small boxes for minutes, seconds, and tenths of seconds. The total was



carried out in the border. No chance for the times to be misread with these pasteboards on the job.

Without a doubt, the *Rudderbug* is on top of the heap as the most popular type of radio model. Several innovations of this particular model are in the air at almost any R.C. gathering. We had the good fortune to watch a two-thirds version of the *Rudderbug* in action a few weeks ago. Harold Bulmahn of Waco, Texas, made a trip out to California and brought his R.C. ship with him. The model is powered with an Arden .099 engine and carries the very popular Control Research rig. The receiver is a two-tube outfit. The first few flights were a bit erratic, but after a few minor incidence and weight adjustments, the ship handled like a dream. We particularly enjoyed the snappy low altitude maneuvering. This type of flying must have paralleled the flights made by the Canadian R.C. modelers which Harold deBolt informed us about in our last column. Bulmahn made several r.o.g. take-offs that were quite spectacular. The brisk wind made it necessary to change rudder position several times before the ship left the ground, but friend Harold coped with the situation with ease.

The blast of wind at the Hahn meet was trivial in comparison with the storm we drove through to get to the Fast Team Race Meet held by the F.A.S.T. Club at the Santa Anita parking area. The winds reached 60 to 70 mph at times, and our Henry J about took off. We were afraid that the meet would be called off, but after getting

near the mountains, which are quite close to Santa Anita, the wind practically ceased so the meet went on as scheduled. The closing curtain on the 1951 season of T.R. brought out the largest group of contestants we've seen in nearly two years. The fact that the two top men in the 1951 point standings, Cliff Potts of San Diego and Paul White of Monrovia, were only five points apart kept the spectators and contestants at the edge of the circle all day long. Paul held top honors until he had a bit of trouble in his heat races, then Cliff fired up and practically ran away from the field of contestants. We've followed Cliff's modeling career for quite some time and have never seen a cooler customer in the flying circles. Stunt flying and team racing are Potts' long suit, and he's enough hardware on his shelves to put a trophy dealer to shame. He has helped many youngsters over some of the rough spots of model flying and is always ready and willing to help stage a model flying show at orphanages, sport gatherings, or any other functions that want flying as part of the program. If there is a bigger conglomeration of different types of u-control models in anyone's workshop, we have yet to see it. Cliff has flying saucers, stunt jobs, speed jobs, team racers, helicopters, scale models, and you'd have to dig plenty deep to get to the bottom of the pile. As for Team Racing in 1951, that's easy—his name is at the top of the list. Keep up the swell work, Cliff. We might add that both Cliff and Paul White, Mr. 1 and Mr. 2, fly the *Quest* (July 1951—M.A.N.) team racers and both are powered with (Continued on page 50)



SUPER-CYCLONE

NEW LOW PRICE
\$12.95

AT YOUR FAVORITE DEALER

The easiest to start, all purpose, precision built engine. It has a background of dependable and winning performance. Thousands in use for precision flying, free flight, U-control and experimental flight.

SUPER-CYCLONE HAS BEEN SUPER-TESTED

Every engine is run on test stand before leaving the factory and is guaranteed for a period of 60 days from date of purchase. Super-Cyclone will give you the efficient performance you want.

Buy SUPER-CYCLONE ENGINES AND PARTS FROM YOUR LOCAL DEALER

Manufactured by
SUPER-CYCLONE
GRAND CENTRAL AIR TERMINAL
GLENDALE 1 • CALIFORNIA

MODEL AIRPLANE NEWS • March, 1952

Complete FLYING OUTFITS

WORTH TWICE OUR COMBINATION PRICE!

WE WILL SUPPLY

A complete flying outfit with your own choice of any advertised engine or plane—and save you money. Just order from us or write for price. IF IT'S ADVERTISED, WE HAVE IT.

IT ISN'T OFTEN that you get the chance to buy, at less than half price, a U-Control Plane, Engine and All-Accessory Outfit with your own choice of a well-known **FACTORY ASSEMBLED** ignition or gls engine. Everything carries the famous America's Hobby Center as well as the manufacturer's guarantee.

Even if you are a beginner, you won't have trouble building and flying any of these flying outfits, full-size plans of any easy-to-build and fly plane, every accessory you will need, complete instructions, etc., etc. If you are an old-timer at building and flying model planes, we don't have to tell you what these bargain outfits are really worth.

Thousands of these complete units have already been sold. They have met with enthusiastic reception because they represent a value unheard of before in the modeling field. The price is so low that we cannot sell to dealers. You really save from \$10 to \$12 by buying the complete, packaged unit—everything is engineered by experts for a perfect flying combination.

YOUR OWN CHOICE OF ENGINE, PLANE, PLUS ALL ACCESSORIES, INCLUDING: Correct size finished propeller • 3-way plug wrench • Presto Engine starter with handle and cord • Speed indicator tables • Log Book • Motor cover • Spark or gls plug with gasket • Complete engine instructions • 24 page Gas Engine Theory Manual • Engine adjustment chart • Metal fuel tank and gas line • Metal Battery box • Wilco Quality Coil • 12" Hi-tension lead wire and end clips • 18" Insulated Ignition wire • Ignition slide switch • Coil holder and mount • Everlast condenser • SAE #70 Oil • 4 Ignition wiring lugs • Spark plug gauge set • 2 plane identification tags • 72 insignias • **GIANT** book on Control-liners. How to build and fly them • Cement • Sandpaper • "Pro" all-metal knife and blade • Metal ballcrank with bolt, nut and washer • Elevator horn • Elevator hinges • Lead-in wire • Push-rod wire • U-Control handle • 100 ft. U-Control stainless steel wire & reel • Membership in Modelcrafters of America • 128 pg 2-color catalog • Postage • Packing • Insurance. Ignition parts not needed with gls-engine not included.

YOU WON'T GET OTHER BARGAINS LIKE THESE!



BZZ
Ignition
or gls
\$8.50




AUCO
Ignition
or gls
YOUR CHOICE \$10.00





O.K. BANTOM GLO
YOUR CHOICE \$12.50




O.K. 29 GLO
YOUR CHOICE \$13.50




OHLESON 99
Ignition
or gls
YOUR CHOICE \$15.00

PLUS



TRAIL BLAZER

TRAIL BLAZER Model Plane with carved lower fuselage-half, fully formed aluminum upper half. Balsa sheet wing, no tissue used. Balsa tail surfaces, plywood engine mount. Schematic drawings with step-by-step plans. Rubber wheels, detail paint schemes. 24" wingspan.

PLUS ALL ACCESSORIES LISTED ABOVE

NEW .099 UNIT

Includes all 3 items

For ease of assembly, for trouble-less operation and for real effortless U-Control flying, these units are the answer to the modeler's dream. Even the beginner will have no trouble in assembling the outfit in one evening and be completely ready to fly the next morning.

1 You get a fine engine



2 PLUS Your choice of 2 completely prefabricated bits



3 Plus all accessories

COST ONLY \$9.95

AA FLYING OUTFITS

These are the new pint-size gls engines that are so tiny (1 to 1½ ounces) but develop plenty of power for free-flight or U-control flying.

Your own choice



Plus your choice of planes:



Plus all accessories

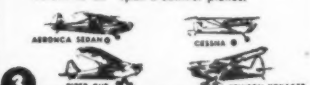
BARGAIN OUTFIT

One of the biggest bargains we have ever offered. Over \$10.00 of merchandise for only \$7.50.

1 YOUR CHOICE OF



2 PLUS your choice of 4 prefabricated Scientific 22" span u-control planes.




3 PLUS ALL ACCESSORIES

COST ONLY \$7.50



AEROMITE
\$9.95

A really beautiful red plastic job. 17" Wing span with Baby Spitzy engine, prop spinner, tank, etc. already installed. Shock absorbing spring steel landing gear. Jim Walker U-control for precision and instant flying. Plastic control handle, nylon control cord.



AJ FIREBAY
\$7.50

Beautifully finished and painted, even fuel-proofed. 17" span includes new "slow-motion" propeller and engine.



DOUGLAS NAVY SKYRAIDER
\$9.95

All plastic model including N & B Top Jr. engine. Landing gear with aluminum rubber-tired wheels, decals, tank, spinner, etc. Includes nuts and bolts for motor assembly. Free U-control model.


READY TO FLY

These complete outfits don't give you the fun of building. They are ready-to-operate. All the fun's in the flying. All you'll need in addition is fuel and battery. — Nothing to Build




DUSTER
\$9.95

True scale biplane u-control model of the type used to crop-dust, stunt and train many pilots. Includes everything including dusting tube, pilot, etc. etc. plus Spitzy Senior engine. Beautifully finished in yellow and blue.




F45
\$9.95

Sweet wing supersonic fighter. Completely ready to fly 20" u-control model designed for the novice or the champ. Includes Spitzy Senior engine, pilot, canopy, rubber wheels, etc. Beautifully finished in silver.



BUSTER
\$7.95

Scale model of famous Whittman Special. 12½" wingspan N & B Top Jr. engine already installed. Use of "U" control system makes it an ideal beginner's model.



YANK 23½"
\$5.95

Equipped with O.K. 530 and all accessories. All balsa free-flight, champion model. Top notch performer.



HAWK 27"

SOLDIERS! SAILORS! MARINES!

Orders placed through us get special attention. We understand your problems and take special care of your orders. Or send for our SPECIAL SERVICES DATA

How To Order Send remittance in full (we prepay packing and insurance) or send \$1 and we ship collect C.O.D. same day for balance. Address your order to us at your nearest branch office.

- Dept. MC-32 156 West 22nd St., New York 11, New York
- Dept. MC-32 1065 Broadway, Brooklyn 21, N. Y.
- Dept. MC-32 55 E. Washington Street, Chicago 2, Illinois
- Dept. MC-32 Rm. 230, 742 Market St., San Francisco 2, California
- Dept. MC-32 Rm. 306, 427 Carondelet St., New Orleans, La.
- Dept. MC-32 Gas & Electric Bldg., Denver 2, Colorado



\$6.95

COMPLETE RACE CAR COMBINATION OUTFIT

HOW! Scientific's "HALF-pint" race car, complete with direct drive PLUS O.K. 500 engine PLUS all needed accessories. Five minutes after you open the package you can race this car on any smooth surface, even your own backyard or cellar. Speeds over 40 miles per hour. COMPLETE except for fuel and battery. Car alone \$2.95.

America's Hobby Center INC
OVER A GENERATION OF FAIR DEALING GUARANTEES YOUR SATISFACTION

Great News! A Big New Value in ^{Fuel Proof} Dope

SPEED-O-LAQ

announces

FPD

FUEL PROOF DOPE



BIG 4-OZ.
BOTTLE
only

45¢

- ✓ Resists all hot fuels!
- ✓ Excellent coverage, high lustre!
- ✓ Fast drying!
- ✓ Available in 12 colors—plus sanding sealer, clear, and thinner!

and
full 1-oz.
bottle
only 15¢



Speed-O-LAQ FPD is formulated to give the model plane builder the ultimate in a smooth high gloss finish with excellent rubbing qualities. Compare and you'll agree — FPD is the greatest value in fuel proof dope.

Available through your jobber or contact factory.

SPEED-O-LAQ PRODUCTS CO., INC.
2386 Wycliff Street • St. Paul 4, Minnesota

DOOLING has something . . . of interest to anyone who builds models!

It's the **BRAND NEW "DOOLING 29"**



Only
\$14.95

A brilliant new engine that bears the same relationship to its field that the famous "Dooling '61" holds in its championship class. They look alike—act alike. Sisters under the skin. The utmost quality at reasonable cost.

Specifications on The "Dooling 29"

Bore .800
Stroke .594
Bare weight 6 1/2 oz.
Aluminum piston, with rings
Crankshaft mounted with two ball bearings
Molybdenum iron cylinder liners
W.P.—% at 17,500 r.p.m.

Regulation Discounts
to Dealers and Jobbers

DOOLING BROTHERS

5452 West Adams Boulevard • Los Angeles 16, California

M.A.N. at Work

(Continued from page 1)

for it! We know the airplanes you would like to build; just keep watching for them. Big things are being planned.

▶ When we first began to build models, Ma used to get a mad on when school started in September. Later on, it was the better half who thought we overdid things. Of course, a guy can't fail to get his marks or expect his girl or his wife to look upon him fondly while he cuts out 36 wing ribs but, after you have been in the Open Class for a couple of decades, things change. Now take this Veco Comanche we built in bed while "sick" with the gripe. There we were, propped up and woozy, slapping in the formers when in walks our youngest daughter and cracks, "Daddy, don't you ever give up?"

▶ Speaking of "We Tests" and new kits, the oldest boy put together some months ago one of DeBolt's *All Americans*. Now that Don Grout reports so favorably on the flyability of this airplane, we can add from first-hand observation that it is a cinch to build. A neat, accurate job resulted without side-line coaching. Good as we can do. Maybe that isn't a compliment?

▶ Do you believe everything you hear? Which way will a gas job tend to turn if you decrease the pitch and hold the diameter? Always thought it would go more to the right. New Yorkers argued us this summer that it is the other way. Now we have had airplanes that have done both! Also have had ships with marginal power which flew better, climbed higher, when incidence was removed. Add incidence to add lift and you killed performance completely. So, on low power, drag to thrust is a major factor. This is something for builders of cargo carriers to consider. Better sections at less incidence should life more with the power limitation they have. And as weight goes up, it takes increasingly higher pitches to get off! Have noted, too, that with low power you require more downthrust and more offset. Going from a .19 to an .09, the airplane required down and right to be doubled, and 1/8" incidence removed before the ship would fly. High thrust line rc job we have now apparently has very small slip stream affect against fuselage and thus requires terrific right-thrust to offset torque. When a ship stalls, you'd think that incidence should come out. Our rc job stalls worse every time this correction is made. Take out enough and the plane cannot be controlled. Stall resistance and inherent longitudinal stability is murdered by decreases in longitudinal dihedral. Noted Pete Andrews' hot new free flight could not be stopped from looping until the c.g. was moved back—yes, back!—and incidence removed. Flew fine.

▶ You think that wash-in always holds or lifts up a wingtip? At glide speeds, it may drag that side of the wing back and aggravate the turn in the wrong direction. If the vertical tail is too small, the model can go one way when wash-in is added, but if the vertical tail is large enough or excessively large, the machine can turn in the other. And to keep the pot boiling, will a 6 x 4 prop travel the same distance in the same number of revs as a 10 x 4? Let's argue that one out in Rich and Lean.

▶ This must be old home-week for editors for whom we once worked. C. B. Colby, who used to challenge us to duels with ping pong balls at 40 paces every time we discussed a prospective article on one of those other magazines, approached with flaps down and engines roaring to tell us how he chased authentic plans all over heck and gone for his book "Our Fighting Jets." (Short pause for commercial; Howard McCann, 210 Madison Ave., New York—thank you.) "C.B." is an old-time pilot and aviation editor who knows his onions. Matter of fact, he was the source of that accurate three-view of the Cutlass in Planes in the News a few months back when Dave Anderton was flying around Europe. Only thing we have against C. B. is that we couldn't convert him to model building.

THE END

**NO
ONE
CAN
BEAT
5
ACES!**

America's Hobby Center, Inc. ALWAYS has a winning hand because it has your interests at heart. When we make an offer, it's always a bargain, not only because it's top-notch merchandise, but because we go all-out to save you money AND give you special value. Here's almost \$10.00 of regular advertised merchandise, fully guaranteed, and selected by our experts as a matched unit, for

only \$555. OK CUB 039 15.95



THE WHOLE WORKS FOR ONLY \$5.55

BEAT THIS PRICE IF YOU CAN

**FOR
ONLY**

\$9⁹⁵



Most Powerful 1/2A engine

**CURTISS
P40F**

(By Monarch)



20" wingspan 'Spittin' Image control-line model. Extra deluxe kit, PERFECTLY and COMPLETELY PREFABRICATED. A beautiful model you will be proud to fly—and a cinch to build in only one evening.

PLUS

PLUS EVERY accessory to build and fly ~~except~~ dope, fuel and battery. INCLUDED: matched propeller, tank and fuel line, also plug, connecting clip and wire, wrench, motor mounts, mounting bolts and nuts, flying wire and reel, control handle, motor cover, identification tags. Presto engine starter, all hardware, bellcrank, elevator horn, hinges, sandpaper, cement, rubber wheels, decals, lead-out and pushrod wire, formed landing gear engine instructions, full-size plane plans and instructions, log book, speed indicator.

PLUS Glo Engine Handbook, giant book on Control-liners, **PLUS** membership in Modelcrafters of America, postage, packing, insurance and **129** plus 2-color hobby catalog.

EVERYTHING in this magazine can be ordered from A.H.C.



TWO STORES TO SERVE YOU!

Largest stock in the country at either of our two stores.

1065 Broadway, Brooklyn, N. Y.

Experts on hand to help you with your problems. Complete stock including engine parts and service at both stores.



- 1. One year subscription to Model Airplane News, Air Trails and Flying Models or its equivalent value to our regular customers.
- 2. 100% Money Back guarantee on unused purchases.
- 3. Unused purchases exchangeable within 14 days.
- 4. No postage or packing charges — we insure safe delivery anywhere in the world.
- 5. 24 Hour service. Mail addresses in Chicago, Denver, New Orleans and San Francisco will be answered. Mail your orders to our N. Y. office for prompt shipment.
- 6. Most complete model stock in America — gas, rubber, solid, etc. If it's ordered, we can usually supply it.
- 7. Competent understanding of your modeling problems.
- 8. No "minimum" orders. Any order is welcome.
- 9. FREE gas motors, 50 ITEMS WORTH OVER \$7.00 AT NO EXTRA COST.
- 10. FREE rubber wheels, knife, etc., etc., every order over \$10.00. 12 ITEMS WORTH \$3.50 AT NO EXTRA COST.
- 11. FREE membership in "Modelcrafters of America," the club that keeps you up to date on gas modeling and SAVES YOU MONEY ON YOUR PURCHASES.
- 12. FREE illustrated giant 2-color 128 page catalog with every order.

Send remittance in full (we prepay packing and insure) or send \$1 and we ship collect C.O.D. same day for balance. Address your order to us at your nearest branch office.

America's Hobby Center INC.


Please RUSH me the following:
PLEASE PRINT

DEPT. MC-32

Name

Street Address	Amount Enclosed
----------------------	-----------------------

City Zone State

Page	Quantity	Name & Description of Items	Cost Each	Total
	ONE ONE ONE	ENGINE TROUBLE TRACER & AID MANUAL SPEED INDICATOR CHARTS FLIGHT LOG BOOK	FREE	with each order
			Total	

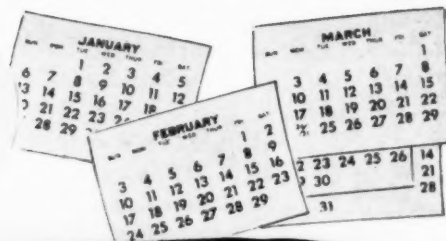
24 HOUR SERVICE AT ALL TIMES

Only
25¢
each

Handy WORKBENCH EDITIONS of these famous Winston books (regularly \$1.00 each) for only 25 cents each:

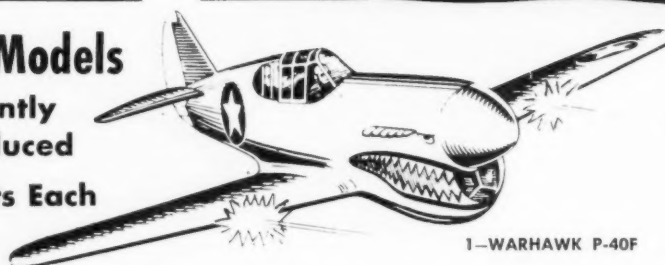
GLO ENGINE HANDBOOK. Tells all about the theory and operation of glo engines.

CONTROL LINERS. How to build and fly them. Covers the subject from A to Z
GAS MODEL PLANE CONSTRUCTION. The answers to every problem you
will ever meet



MONOGRAM SPEEDEE-BILT *flying models*

3 New Models
Recently
Introduced
85 Cents Each



1—WARHAWK P-40F



2—F-86 SABRE JET



3—CORSAIR F4U-5

Check These Exclusive Speedee-Bilt Features

- ★ Close Scale. Faithful to the Real Airplane
- ★ Plastic Two-Three-Four-Bladed Props as Required
- ★ Plastic Pilots for Extra Realism
- ★ Plastic Spinners, Cowls, Etc
- ★ Plastic Cannon, Bombs, Machine Guns, Rockets

- ★ Plastic Canopies With Molded Detail
- ★ Patented Monofoil Wings 90% finished
- ★ Prefabricated Fuselage for Jiffy Assembly
- ★ Formed, Ready-to-Use Metal Parts
- ★ Small Wood Parts Completely Finished

- ★ Genuine Decals in Authentic Colors
- ★ Super-Detailed Picture Plans



4



5



6



7

12 Other Speedee-Bilt Models to Choose From ... Each 85c

Select Models from this List • Get Them at Your Favorite Store

WARHAWK P-40F, Kit G-15
F-86 SABRE JET, Kit G-13
CORSAIR F4U-5, Kit G-14
AERONCA, Kit G-2
BOEING KAYDET, Kit G-5

ERCOUPE, Kit G-4
THUNDERJET F-84, Kit G-10
F-51 MUSTANG, Kit G-9
SPAD PURSUIT, Kit G-8
CESSNA SEAPLANE, Kit G-7

LONG MIDGET, Kit G-6
NAVION, Kit G-11
PIPER CUB, Kit G-1
MONOCOUCPE, Kit G-3
HELLCAT, Kit G-12



15



14



13



12

Airplanes • Race Cars • Ships

Good dealers everywhere have the complete Speedee-Bilt Line and other exciting Monogram Models. Ask to see them all at your favorite store. If no dealer in your neighborhood order from address below. Add 25c to your remittance for packing and shipment from some nearby dealers stock.



8



9



10



11

Monogram

MODELS, INC.

225 NORTH RACINE AVENUE, CHICAGO, 7

EL DIABLO

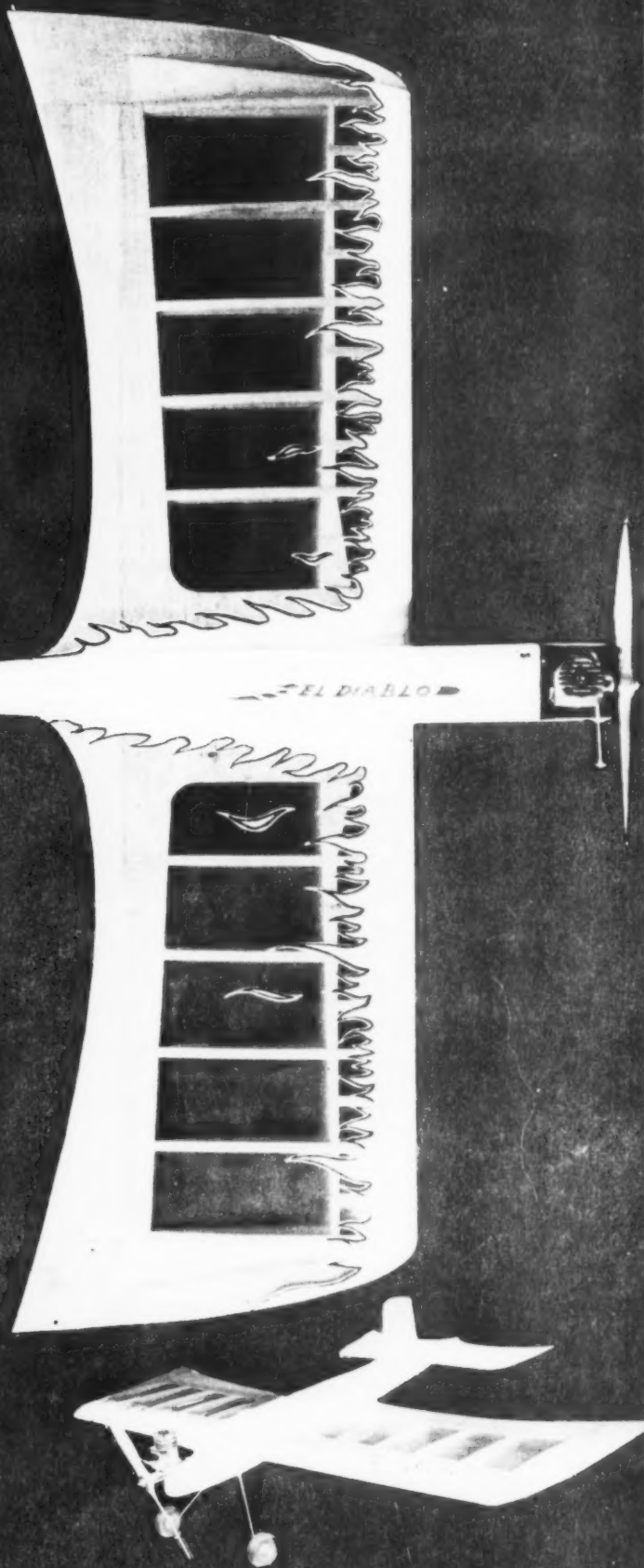
Exciting, you say? Brother, it is spiffy looking, rugged as all get out, and flying fool besides.

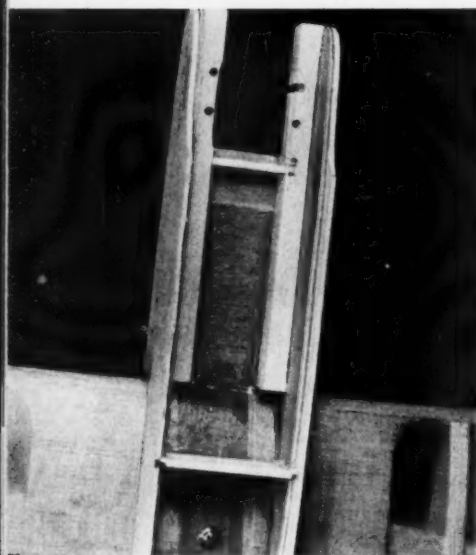
by HAROLD REINHARDT

► *El Diablo* was not designed, it was just built. It was three days before the Plymouth Eliminations and I found myself without an airplane. So, I started building a plane that would be simple, strong, smooth but tight turning, and wicked looking. When I got done, it looked like the devil, so I named it *El Diablo*, which means "The Devil" in Spanish.

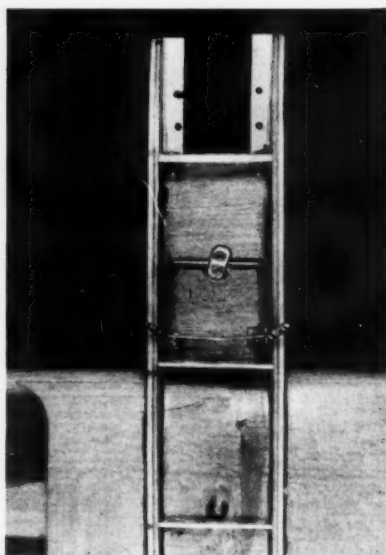
It flies very well with a Fox .35 but any engine from a .19 to a .49 will do. Construction is very simple if you follow the plans and the article carefully.

Start construction by building the wing, since the whole airplane is built around the wing. First, make a rib template from tin-can stock. Make up a set of ribs by cutting around the pattern on 1/16" stock. Stack the ribs and the false ribs together and sand them smooth. Cut them in half where the full depth spar will separate them, and cut the notch for the leading edge. Cut the full depth spar to size, and cement the front halves of the ribs and the false ribs in place, being sure to center them. Add the leading edge, then the back halves of

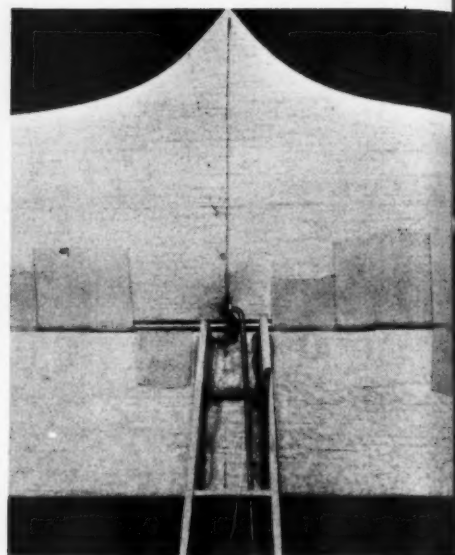




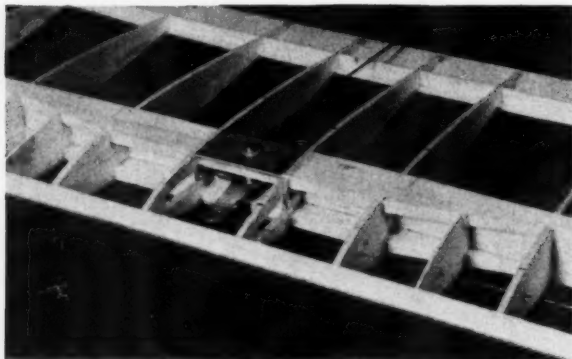
Bearers on plywood and against plywood sides.



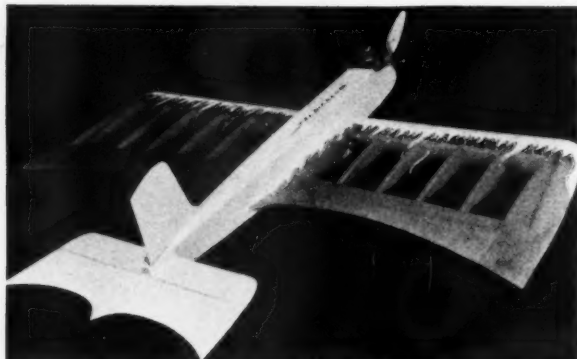
Gear attaches to ply by metal strap fittings.



Red-horn detail. Note mounting of tail skid.



Let this be a lesson, stunt fans: crank installation as should be.



Hide that French curve, Red! A Fox .35 but takes .19's, .49's.

the ribs. Cement half of the split trailing edge in place, and add the trailing edge fill-ins. Sand smooth, and add the rest of the split trailing edge.

When this is dry, apply another coat of cement to all joints. Next, taper the main spars and the spar reinforcements. Lay the spar on the wing, and mark where the ribs must be notched. Cut out all the notches, and cement the main spars and the center reinforcements in place. Then cut the bellcrank mounts to size, notch out the spars, and cement them in place. Drill a hole right through for the bellcrank bolt. Cut out the full depth spar in the center, and install the control system. Cut away the center ribs until the bellcrank swings to the angles shown. Now add the center sheeting, the trailing edge, the tips, and the cap strips. When all is dry, sand well and cover with silk. Add one coat of clear dope, and the wing is finished.

Next cut out the tail assembly, and assemble with the horn and hinges. Cut out the plywood motor mount supports, the motor mounts, and the bottom plate. Cement and screw the motor mounts to the motor mount supports, and assemble with the bottom plate on the wing, being sure everything is lined up. Cut out the fuselage formers and the sides, and the plywood pushrod guides. Slide the sides onto the wing and cement in place. Add formers and the pushrod guides, and mount the tail assembly. Hook up the control system and make sure everything works well. Bend the landing gear and tail skid to shape and mount in place. Then cement on the bottom.

Make the tank as shown and cement into the fuselage. Cement the top in place, and add the rudder. Drill holes for the engine and solder the wheels in place. Cover the entire fuselage and the tail assembly with *Silkspan*. Apply

four coats of clear dope to the entire airplane, trim to your liking, and apply two coats of hot fuel proofer.

Fly the ship on 50 feet of .010 lines with a .19, or on 60 to 70 feet of .010 with anything bigger.

The first time you fly your *El Diablo*, you should keep in mind a few things. For one thing, this is an all-out competition stunt ship. It is not a sport flying airplane that might let you nap at the controls. Every time you move the handle, the airplane will move—but fast! On the other hand some stunt ships are too easily over-controlled, but if this plane is built closely following the plans, you will find it smooth flying but tight turning.

On your first flight, take off with the wind directly at your back. If you take off down wind, the tail might have a tendency to be pushed under the airplane, resulting in erratic take-off. Taking off into the wind will cause the lines to go slack. First try a few mild climbs and dives, and get the feel of the controls. Next try a few wing overs. Practice these maneuvers until they come automatically. If you have never stunted before, try to find yourself a hayfield or a field with high grass. Let's not kid ourselves, when you are learning to stunt, you are bound to crack up a few times. In soft grass you can pile in any old way and still break nothing more than a prop. In these grassy fields the ship must be hand-launched.

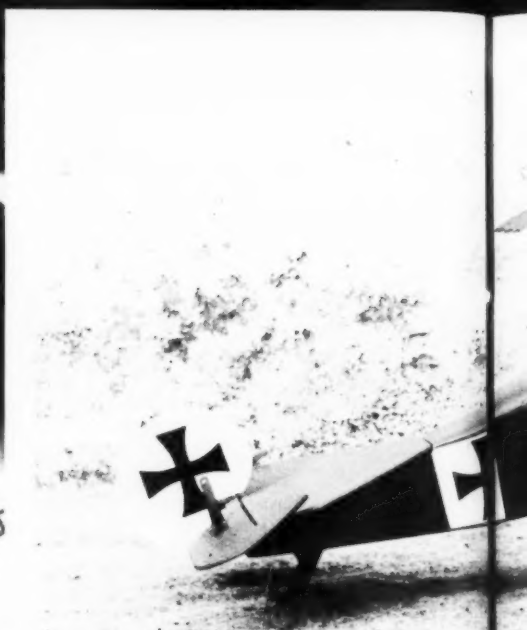
After you get the hang of wingovers, try inside loops, outside loops, then inverted flying. If you can master that much, the rest of the stunts will be easy. It just takes a lot of practice.

As for competition stunt flying, keep your eye on the judge. Make sure he is watching your airplane before you do a maneuver.

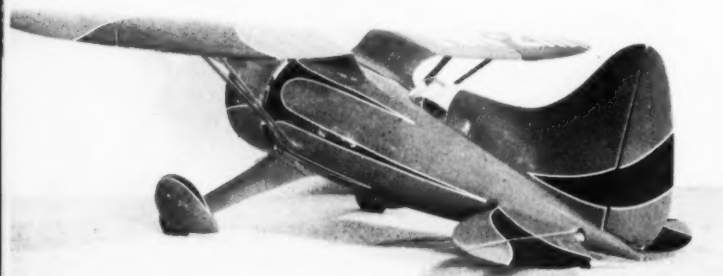




Your prize model of the month, said N. Kasiner of Rochester, who took this shot of J. Fordham and DC-3—so it is! Model has interior details, as operating doors, stairs. Sorry, no crew!



Fokker Tripe, by J. Pearson Evans, Ireland



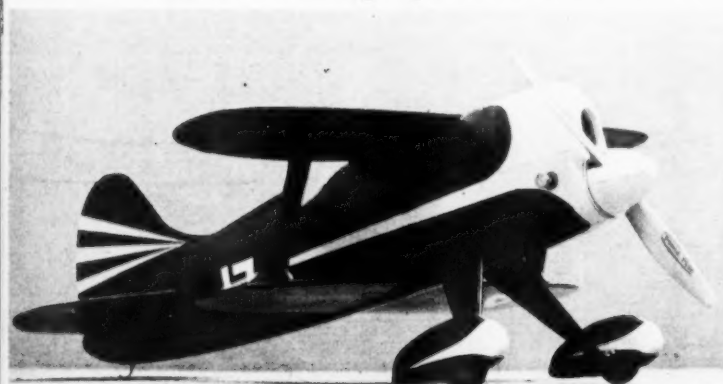
Second prize subscription winner, lovely Hall Racer, Marty Lihl, West New York, N. J. Won first place, 1951 Mirror Meet. Span 27 inches, and Amco 3.5cc.



Third prize subscription winner for workmanship goes to Rene De Guire, of St. Dorothea, Quebec, for Grumman Tigercat Navy fighter.

air ways

Readers' ships prove there is no limit to modeler's imagination.



Made from plans in July 1949 M.A.N. is a Wee Bipe control job for a Cub, by R. Joseph Ransik, Pittsburgh. Wheel pants were added for a realistic touch.



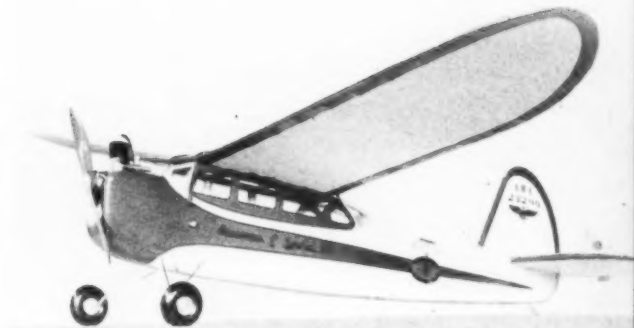
Nifty Ringmaster from October 1951 M.A.N., built by Dick Roder, Joliet, Ill. He used O & R .29 for power. Lookit those stripes.



is finished in scarlet, black crosses on white. Has instruments. Paul Del Gatto of Mt. Vernon, N. Y., developed odd push-pull Wakefield.



Nieuport, S.E. 5, Bob Sherwood; D-7, Art Simmons, Syracuse Controliner's Club. S.E. 5 has OK Twin, D-7 a Forster 99. Relays for throttle, all ships.



Buccaneer, Walt Fitch, Wichita (XB-47 flight test inspection) is 500th model since 1912. Five degree wash out in tip, ignition.



Paul Samaras, Denver, built huge Little Moe, to get most out of .60 engines.



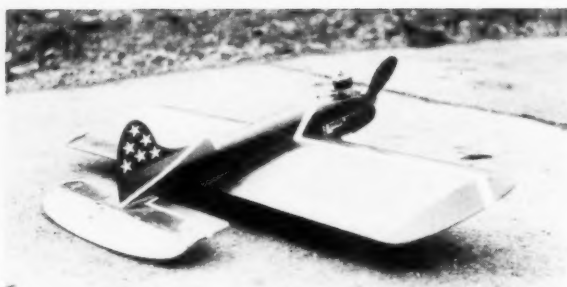
An .045 Monogram Hellcat (planked), Dick Stouffer, Champaign, Ill.

**We
test**

The American Junior



Helper about to release the author's K & B 19-powered All-American Senior. Is well prefabbed.



This ship can be assembled for either clockwise, counter flight.

by **DON GROUT**

Test pilot reports that DeBolt's .19 job is smooth, fast, and can hold its own against the 29 stunters. Unique asymmetrical stability really pays off.

► Control line has developed extensively in the span of a very few years but outstanding in control line evolution has been stunt. In the beginning, everything was power. You put in a 60 and you had a stunt ship. But stunting has become much more refined, devolving toward ease of handling, grace and precision. A great share of the credit is due such designers and flyers as Lou Andrews, Bob Palmer and Harold DeBolt.

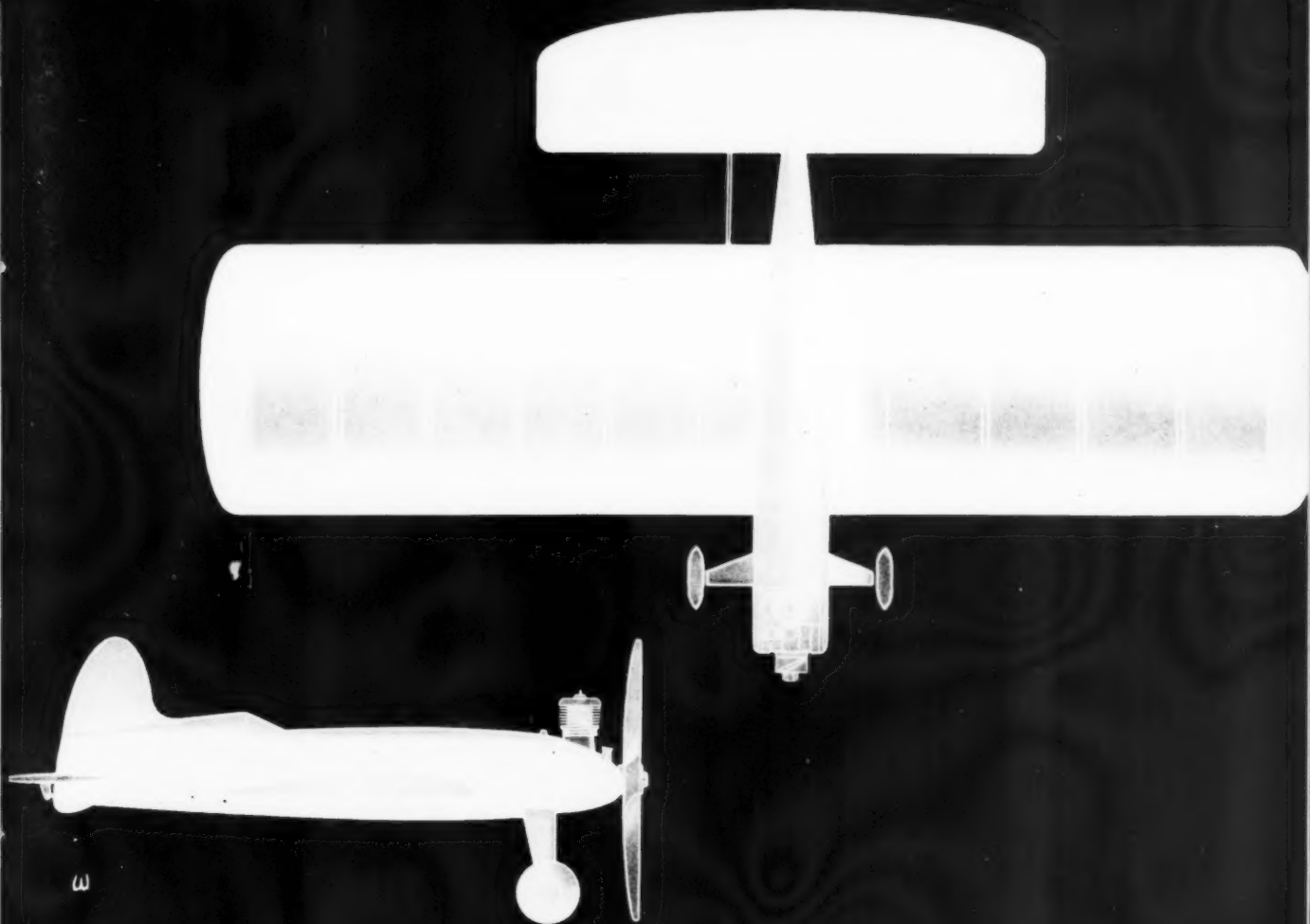
Harold DeBolt has been a top contender in speed and an outstanding designer and manufacturer of speed ships. He holds the National Class D speed record. He became outstanding in the stunt ship manufacturing field with his famous *Stuntwagon*.

The latest of DeBolt's designs are the top two of the "All American" series, the *All American* and the *All American Sr.* manufactured under the name of Dmeco, the DeBolt Model Engineering Company, Williamsville, New York.

With each development and design of a stunt model, the thought is, "how can this be improved?" In the *All Americans*, we have something different as food for thought: "Asymmetrical Stability." This boils down to putting the fuselage, not in the center, but toward the outside of the wing, making an unbalanced wing, longer on the inside, yet mounting the bellcrank or pivot point to the inside of the center line of the wing. This construction maintains tension on the lines, thus eliminating the necessity of offset rudder and engine and doing away with weight on the outboard wingtip. The advantage is apparent. With the absence of dead weight on the outboard wingtip, the wing loading is reduced and achieves a higher ratio of power to weight. With no engine or rudder offset, there is less drag. These combined factors would allow more speed, if desired,



Tip ballast, offsets eliminated, hence maneuverability improved.



or a larger plane for a given engine size.

Most stunt ships on the market today are designed around the 29 engines. For this reason, the *All American* and the new K & B 19 were selected for "We Test"—which gives the 19 enthusiasts a break. Will a well designed 19 ship stack up against the best of the 29's?

The *All American* is a full fledged stunt job with a wing span of 36", a chord of 8-1/2" and wing area of 300 sq. ins. It has a comparatively short moment arm (pivot point to tail), a Dmeco feature. It is trim lined and very dapper in appearance painted red, white and blue. The plans call for engines of 19 to 32 displacement but with definite recommendation for the smaller size for stunting.

The kit is really prefabricated, not just die-stamped, but completely cut out. Although a formed landing gear is the only hardware included, it is well compensated by the excellent selection of wood and the true cutting of parts; ribs particularly are sharp and identical, which is most important.

The plans are full size, clear and concise, with wing layout, fuselage top and side views, important cross sections and assembly detail drawings. The beginner may miss step-by-step instruction and bellcrank detail but for anyone who has built a plane or two, the notes are more than adequate. And after all, the *All American* would be "hot" for a beginner's first ship.

The details of different engine installations are good and recommendations of props for different engines, line sizes and necessary accessories are very helpful. The Dmeco hinge construction is one of the best and simplest. The writer has used this on practically all ships since it was first encountered on the *Stuntwagon*. The landing gear

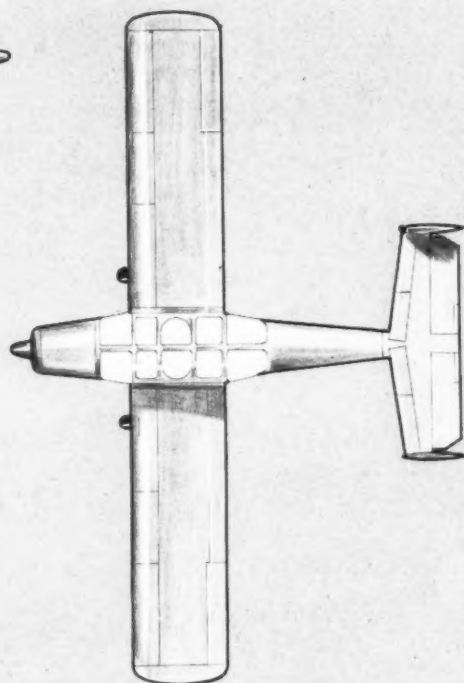
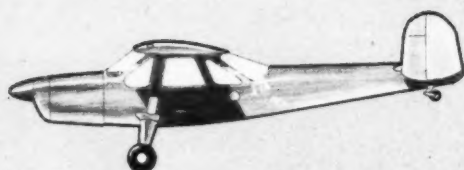
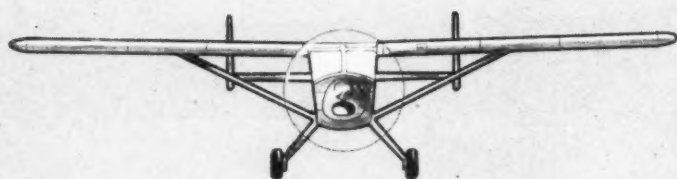
is preshaped dural, very rugged and fastened first to hardwood, then to the motor mounts. This landing gear design involves no problem in interfering with tank space as some wire gears do. The motor mount, being of minimum length for better stunting, may cause difficulty with larger engines if more than 9" props are desired. One important point frequently overlooked is provision for clockwise or counter-clockwise flying construction, but it has not been overlooked in the *All American*.

Dope dry, engine installed per instructions, the ship balances slightly forward of the point designated but we'll try it as is. This is the moment you wait for and hold your breath. We are using a K & B 19, K & B *Supersonic 100* fuel, Tornado 9-5 prop, 60 foot lines. The plane weighs in complete with engine, ready to fly at 25 oz. We have a note "model designed for clockwise flight for best results," so, being skeptical of all new developments as most everyone is, we added 1/2 oz. only to the outside wingtip and a very slight engine offset (no rudder offset). Both of the above can be removed after the initial flight. The next question is, "how will she fly?"

Back again and frozen. It was certainly given a test. Cold! Wind about 30 miles an hour, not steady but in gusts. The engine barked a couple of times then grabbed like a veteran. The test model eased off the ground with practically no roll and leveled off as steady as a sitting duck. The first flight was a preliminary feeling out. Nice on response but fast overhead, plenty of pull. Loops a little wobbly. Inverted, steady and smooth. Back on the ground and a couple of changes. Slight weight at the tail to bring the balance where the plans called for. A Top Flite 9-6 prop. That 1/2 oz. weight off the

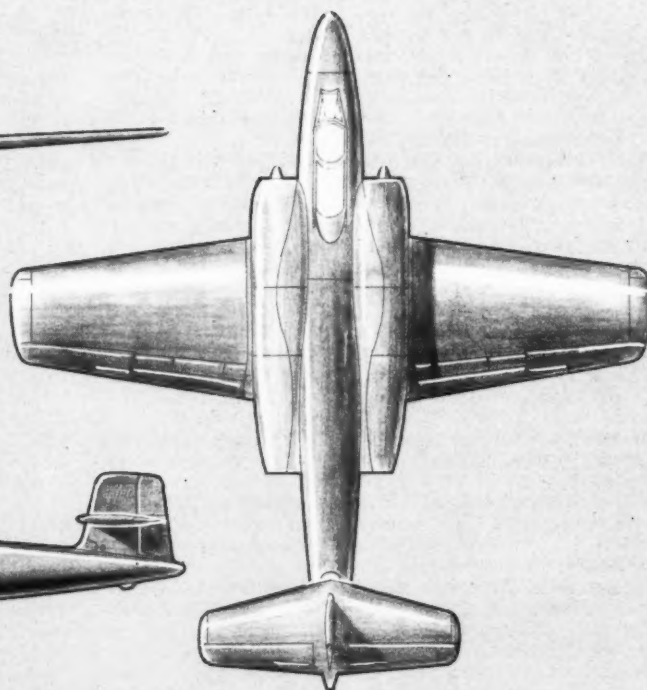
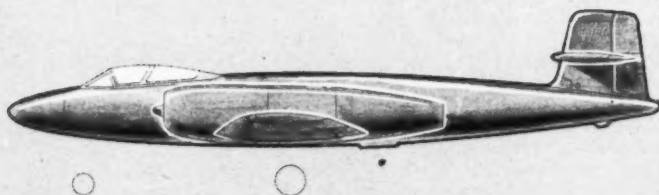
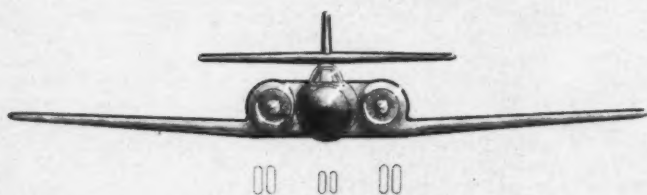
(Continued on page 48)

No. 23—Max Holste MH-152



Anderton

No. 24—CF-100



Anderton

planes in the NEWS

by David Anderton



All-weather fighters are spotlighted this month. One is a novel modification of the Scorpion, the other, Britain's twin-jet Gloster delta-wing fighter.

► March winds and April showers are a wonderful way to start one thinking about the problems of bad-weather flying—and fighting. It's no cinch to go up to hunt a bomber or fighter in weather when the birds are walking; even the mess of navigational and search radar and other gear can't help the pilot avoid the feeling of flying through another world of grey mist, or black night. So one of the phases of aeronautics that always draws a lot of study is that all-weather problem.

And for the moment, we are concerned with all-weather fighting. This is because we are in the midst of a dress rehearsal for a possible war, an air war in which all-weather operations must become routine for the side that wants to win.

(All-weather, incidentally, is the latest designation for the type of airplane that was called night-fighter at the end of World War II.)

This month, there are two new prospective stars in the night sky—one American and the other British. The first is a modification of a proven craft; the second is a new design. Here's what they are like.

► *Northrop F-89D*—The *Scorpion*, thin-winged denizen of the upper atmosphere, appears in a new revised form, with unique armament. In the place of conventional wingtip

tanks, the *F-89D* carries a pair of rocket launchers. And to aim and fire them, the *Scorpion* has a brain—a little black box which locates the enemy in its electronic eye and then kicks him in the tail with a brace of rockets.

The good news about this craft is that the Air Force, which has been pleased about the performance of its earlier models in the field, has told Northrop to go ahead and bang them out. The first model has been completed at the plant in Hawthorne, Calif., and flight tests are proceeding apace.

This wingtip rocket deal is not the only change made in the *Scorpion D*. The pictures look as if the nose has been lengthened and made more round at the tip. (This could be due to the addition of the gun-aiming and firing radar equipment.) And the external hinge-balance fittings which were so prominent on the earlier models are now as conspicuous by their absence.

The story also is that more fuel has been added; earlier models had a 16-tank system. Four of these cells were in the fuselage, and 12 in the wings—six per panel, of course. Just where extra fuel might have been added is somewhat of a mystery, because the "extra" would have to make up for the old wingtip tanks and more besides.

For dimensions, write these down: span, 56' 2"; length, 53' 4"; and overall height, 17' 7". (Continued on page 41)



Gloster GA-5, top, can mount any engine of the foreseeable future, according to the manufacturer. Above—Max Holste MH-152, a French light plane.



TRI-PACER

by PAUL J. PALANEK

Spanning 22 inches, our Tri-Pacer proved plenty hot on power specified. Paint job is overall sky blue with yellow trim, numerals from Trim Film.

A smart model of a smart airplane, the popular Piper Tri-Pacer. Power is an .074 Cub.

► Designed for AA work, our model spans 22" and sports an area of approximately 85 square inches, with a Cub .074 up front. This installation proved to be plenty hot.

Construction is simple with the full size plans. The fuselage is first. The sides are cut from 1/16" medium hard sheet balsa. Cut to outline shown, then slice along the length of the fuselage. Formers D, E, and F are formed from 1/16" sheet (note grain); firewall B is formed from 1/8" plywood. Cement D and E in position, then F. Cement the fuselage halves together at the tail end. Firewall B is now added and cemented securely in place. While the fuselage is left to dry, the landing gear is formed. The strut is one piece of .032 aluminum sheet and trimmed to proper outline. A 1/16" diameter hole is drilled to receive the axle and a 1/8" hole at the top for the one-piece brace. Two 5-40 holes are also drilled for fastening of the gear. The brace and axle are formed from one piece of 1/16" wire. Assemble the two units by pressing the wire ends into the proper holes.

Cement the 1/8" plywood bellcrank platform and bolt the 2" Veco bellcrank in place. A hard balsa block is cemented to the firewall to carry the engine. For a different

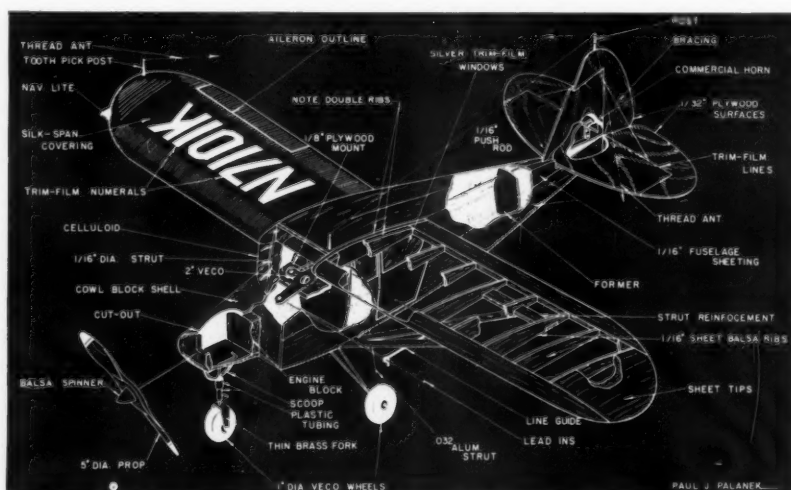
engine choice, a different engine mounting arrangement must be worked out. Install the fuel tank as shown after which the lower portion of the fuselage can be covered with 1/16" sheet balsa. Note that grain runs across fuselage. Cement a strip of balsa to the floor of the cabin and forward of former D. The main gear is then bolted to this cross piece using 5-40 nuts and bolts; cement nuts securely.

The tail surfaces are made from 1/32" plywood. Cut to shapes shown and note that elevator control is on right half only. The rudder and fin are made in one piece, then cut along the hinge line. Break and cement as shown. With the cloth hinges and horn added, the elevator and stab assembly can be cemented in place. When properly dried, the rudder is added next.

With the tail assembly in place, cut holes in the three aft formers, and slip in place the pushrod, which comes through the fuselage on the right side. Solder all loose ends. The lead-ins are .032 wire; form a hook on one end and solder to the crank. Cabin former C is added along with the forward top sheeting. The cabin ribs which are placed just above the cabin are cut and shaped from 1/8" sheet balsa; cement these ribs (Continued on page 44)



Paul and test model. Shadow effect on numerals obtained from red, on top of white numbers.

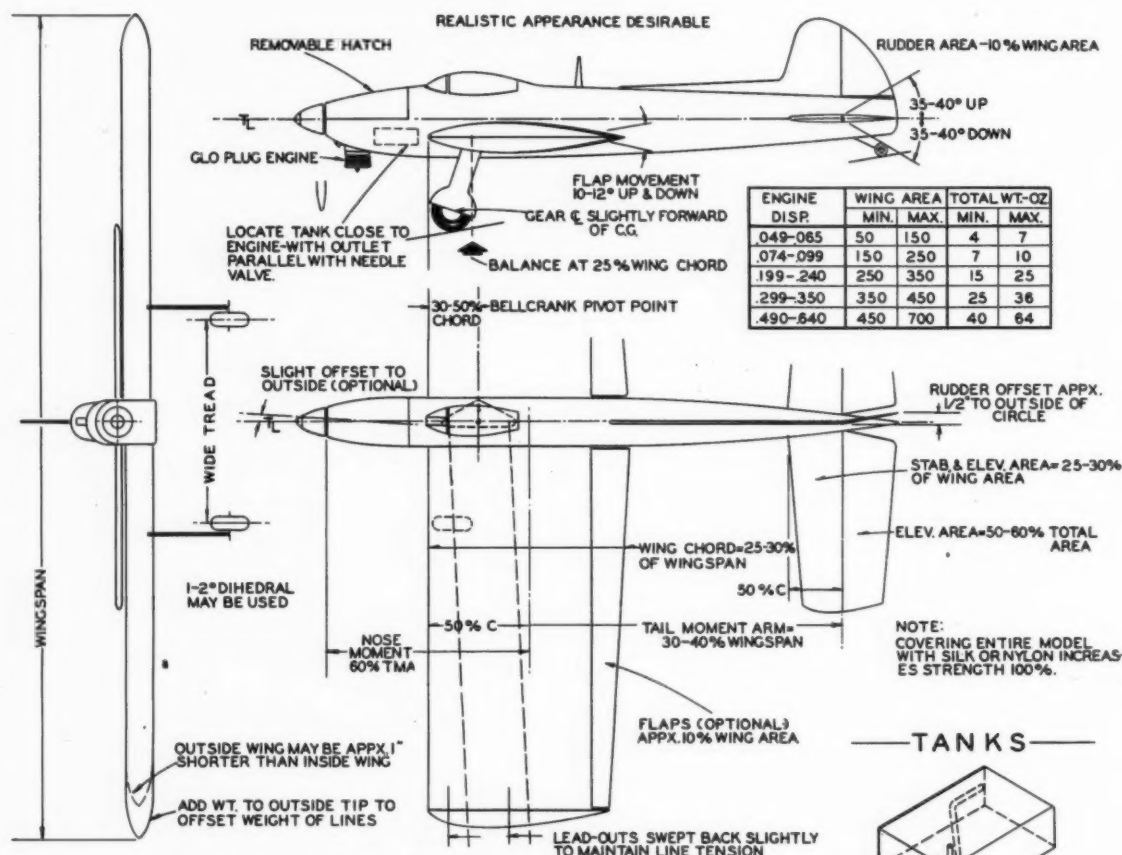


design detail

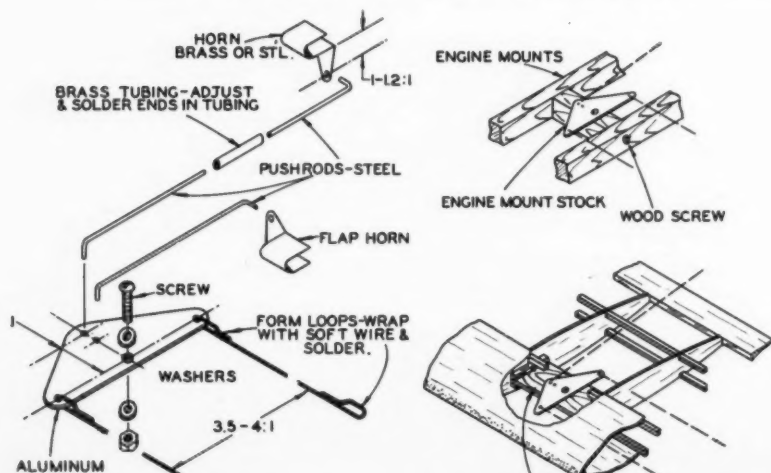
... by Harry Williamson

Stunt

Everybody wants to stunt. But the design must be right or it's no dice. With this dope, you can turn out a job that will fly with the best. You can make one by spring.



CONTROLS-BELLCRANK MNT'G



STRANDED STEEL LEAD OUT WIRES RECOMMENDED FOR A,B,C & D JOBS.

TANKS

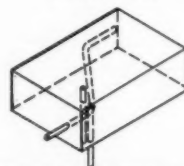


FIG.1 SQUARE TANK-VERY EFFICIENT-EASILY BUILT-EASILY INSTALLED .005-.010 THK.BRASS OR TIN CAN METAL-OUTLET & VENTS-1/8" 3/16 ID BRASS TUBE-ALL CLASSES.

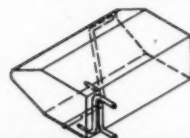


FIG.2 WEDGE TANK-MOST POPULAR-EFFICIENT-MORE DIFFICULT TO BUILD-SAME MAT'L. AS FIG.1-CAUSES ENGINE TO CUT ABRUPTLY-FOR ALL CLASSES.



FIG.3 BALLOON-PRESSURE TANK-INEXPENSIVE-EASILY MADE-MAY BE TROUBLE SOME IF AIR IS TRAPPED INSIDE-WITH PRACTICE CAN BECOME MOST EFFICIENT-1/2A,A & B.

— WINGS —

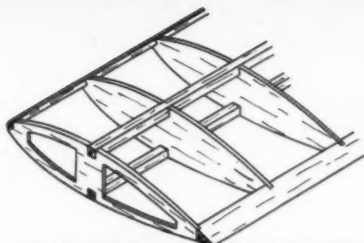


FIG. 1 2-SPAR TYPE - SOLID TE-RIBS MAY BE CUT OUT AS SHOWN - VERY LIGHT - NOT TOO STRONG - FOR 1/2A & SMALL 'A'.

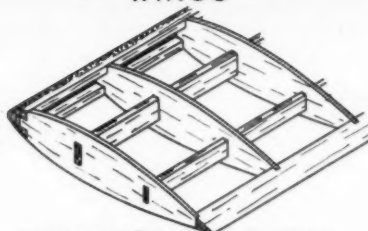


FIG. 2 2-SPAR TYPE - STRONG, HEAVY - MORE DIFFICULT TO BUILD THAN FIG. 1, POPULAR IN 47-48 - FOR CLASS 'B' & 'C'.

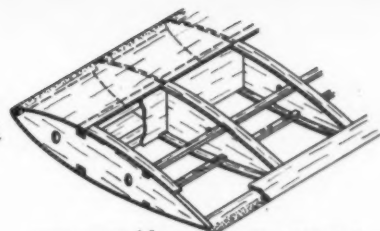


FIG. 3 4-SPAR TYPE - SHEET TE - CAP STRIP - PED RIBS - CHANNEL MAINSPAR - STRONG, LIGHT - HARD TO REPAIR - FOR ALL CLASSES.

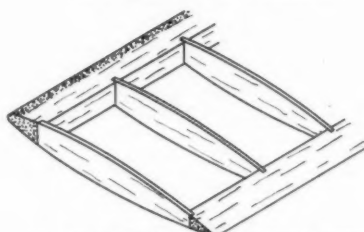


FIG. 4 SPARLESS - HEAVY & TE-RIBS SPACED CLOSER THAN USUAL - NOT TOO STRONG - BEST FOR SHORT SPAN BIPES - FOR 1/2A & B.

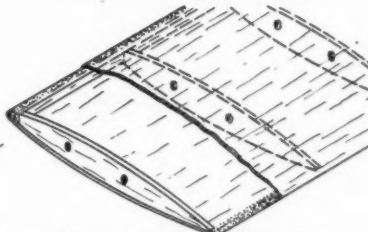


FIG. 5 FIREBALL TYPE - SPARLESS - SHEET COVERED - LE STRIP OPTIONAL - BEST WITH THIN SECTS - FOR CLASSES A, B, C.

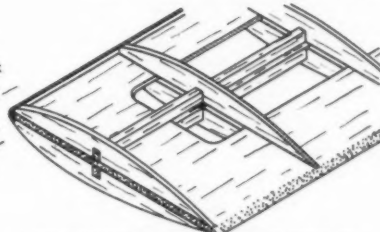


FIG. 6 2-SPAR - SHEET BASE - GOOD FOR THE NOVICE - HEAVY - STRONG - NOT TOO EFFICIENT - GOOD FOR CLASSES A & B.

— WING TIP GUIDES —

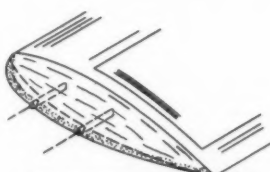


FIG. 1 BLOCK BALSA - MAY BE HOLLOWED - ALUM. TUBE GUIDES - EASIEST TO BUILD - GOOD APPEARANCE - ALL CLASSES.

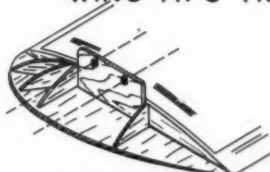


FIG. 2 BUILT-UP - SILK OR SPAN COVERED - PLYWOOD GUIDE - NOTE EYELETS - LIGHT - MORE DIFFICULT - ALL CLASSES.

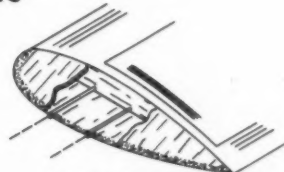


FIG. 3 BUILT-UP - SHEET BALSA COVERED - ALUM. TUBE GUIDES INSET - MOST DIFFICULT - STRONG - CLASS B, C, D.

— FUSELAGES —



FIG. 1 PROFILE - HEAVY - FAIRLY STRONG - POOR WING SUPPORT - UNREALISTIC - HARDWOOD MOUNTS - PLYWOOD COVERED NOSE - BEST FOR TEST SHIPS - 1/2A, A & B.



FIG. 2 ALL SHEET BALSA BOX - FORMERS SET ON HEAVY SHEET BOTTOM - STRONG - LIGHT - GOOD FOR THE NOVICE - PLYWOOD FIREWALL - ALL CLASSES.



FIG. 3 MODIFIED BOX - SHEET SIDES - PLANKED TOP - BLOCK-FAIRED NOSE - REALISTIC - NOT TOO HARD - FOR CLASSES A, B, C & D.



FIG. 4 CARVED & HOLLOWED BLOCK - EASY TO BUILD - STRONG - EASILY REPAIRED - LIGHT - REALISTIC - SHEET PLYWOOD MOUNTS - FOR 1/2A, A & B & C.



FIG. 5 BUILT-UP - VERY LIGHT - LOW IMPACT STRENGTH - HARD TO ALIGN - REALISTIC APPEARANCE - NOT RECOMMENDED FOR BEGINNERS - FOR SCALE SHIPS OF FABRIC COVERED TYPE - ALL CLASSES.

— STABS - ELEVATORS —

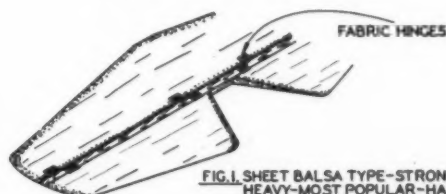


FIG. 1 SHEET BALSA TYPE - STRONG - HEAVY - MOST POPULAR - HARDWOOD ELEV. LE - SAND TO AIRFOIL SHAPE - EASY TO BUILD - ALL CLASSES.

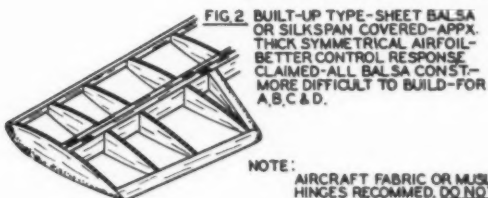


FIG. 2 BUILT-UP TYPE - SHEET BALSA OR SILKSPAN COVERED - APPX. THICK SYMMETRICAL AIRFOIL - BETTER CONTROL RESPONSE CLAIMED - ALL BALSA CONST. - MORE DIFFICULT TO BUILD - FOR A, B, C & D.

NOTE:
AIRCRAFT FABRIC OR MUSLIN
HINGES RECOMMENDED, DO NOT
USE CAULK.

— MOUNTS —

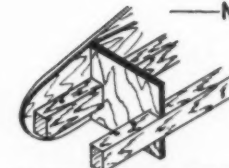


FIG. 1 BEAM MOUNTS - GLUE TO PLYWOOD SIDES - VERY STRONG - EASILY BUILT - ALL CLASSES.

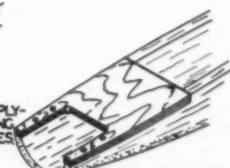


FIG. 2 PLYWOOD PLATE - STRONG - EASILY BUILT - BEST SUITED TO CARVED BLOCK FUSELAGES.



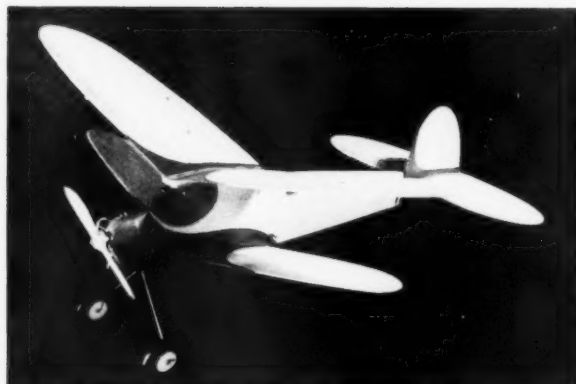
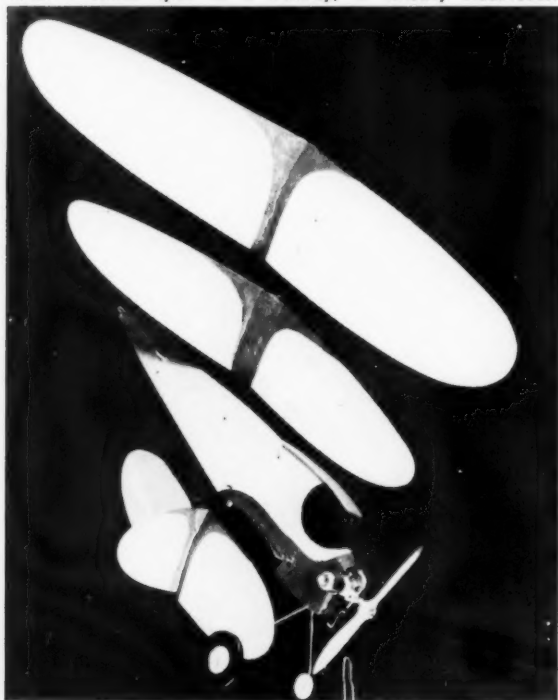
FIG. 3 FIREWALL MOUNT - OAK PLY RECOMMENDED - NOTE CORNER GUSSETS - LIGHT - STRONG - FOR ALL CLASSES.



play plane



Climbing high into mild headwind, the Play Plane shows off tricky lines. It has proved an ability to soar so dethermalizer is a must. Below — This job can be toted around in a box. Like a contest model it comes apart in a crack-up, is virtually indestructible.



Both the top and bottom wings attach with hold-on rubber bands.

by DICK STRUHL

This all-balsa biplane won't win beauty and endurance events but you can take it out to the field week after week for all the fun flying you can take. For smaller engines, it looks like a plane!

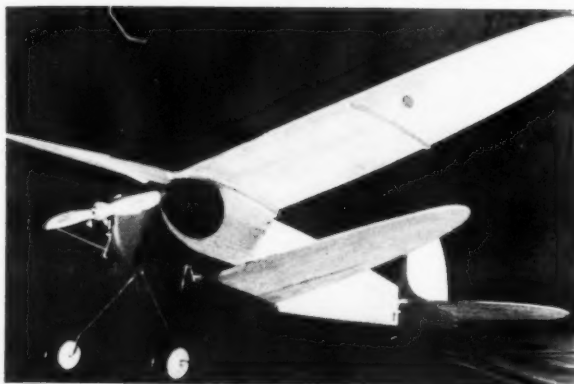
► Construction is entirely from sheet balsa. The wing span of 27" is just about the limit you can go in single-surface sheet-balsa wings. There have been rare occasions, when flying in a relatively high wind, just after launching when a sudden gust of cross wind would wash-out the top wing and spin the model in. But the damage has always been negligible. Crash shock is quickly dissipated through the flexible structures. This last cannot be claimed by a 1951 Ford that was the terminus of one of these spins.

In calm or moderate winds this model performs very consistently and flights are very stable and predictable. A pop-up tail or a spinning glide trim are necessities for it only took one or two flights to make us realize that the slightest thermal or breeze would take this model O.O.S.

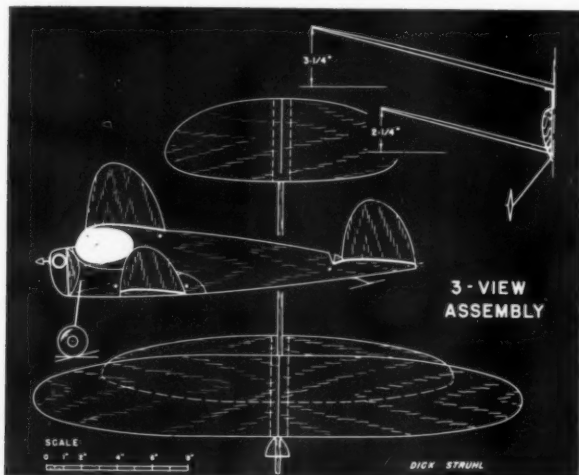
The construction is simple with the help of the full size plans.

The fuselage is cut from firm but not rock hard balsa 1/4" thick. Since the width is greater than most hobby shops stock, chances are you will have to butt two pieces together to form the necessary 4-1/16" width. This is alright as long as the butt is a good joint. Apply a small cement skin along the joint for extra measure. Cut out the portion beneath the lower wing and save. Note that the fuselage ends at the firewall. The portion forward of the firewall is merely fairing and is added after the engine is in place.

Cut the firewall from plywood and cement in place. The mounting holes shown are for the little Spitfire mounted on its side. Drill holes for your individual engine and cement the proper nuts behind the firewall for mounting. When the cement has set, install your engine and then add the balsa fairing blocks behind the firewall. Be sure the firewall has the proper downthrust. Sidethrust can be altered on your engine nuts. Drill 1/8" diameter holes as indicated in the plans and add the 1/8" dowel rubber hooks.



Worm's eye view isn't bad either. Wing span is full 27 inches.



The wing saddles are 1/16" x 1" wide sheet balsa with the grain running span-wise. Make as long as necessary. Pin and cement the saddles in position. The stabilizer saddle is made in the same manner.

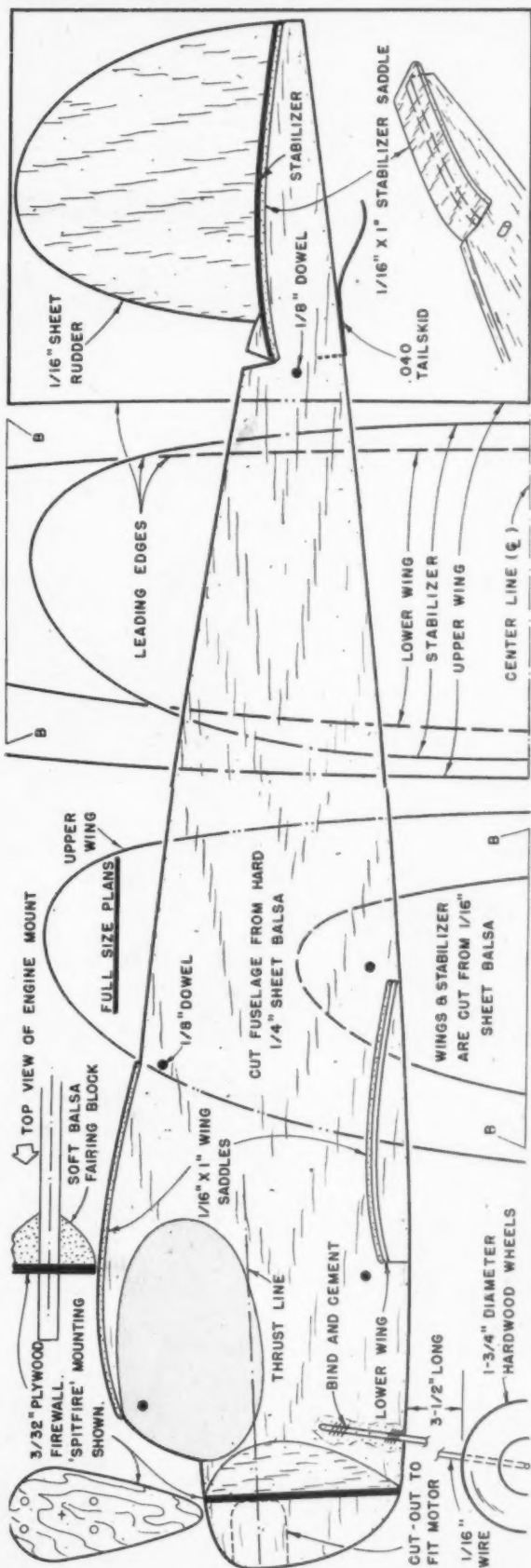
The stabilizer and both wings are cut from 1/16" sheet balsa "A" stock. Do not use quarter grained or speckled balsa here as it splits too easily on a curve. Note that the stabilizer is cut from one piece of balsa. While for the wings, make two of each as shown, turn one over and you have a right and a left half.

The camber is formed very simply. Decide which are going to be your top surfaces. Lay them on the working board and carefully brush a coat of warm water over the first two-thirds of the chord from the leading edge. The water should swell the top surface and form the necessary camber. Note that the camber is rather shallow. If the sheet balsa is too stiff, apply a coat of thin clear dope on the UNDER surface of the wing or stabilizer to correspond the water on the top surface. The dope contracts when it dries and will pull the under side together.

Cut the rudder to the shape shown from 1/16" sheet balsa. Cement the stabilizer to the rudder. The rudder will keep the proper camber in the stabilizer. Trim the center of the wings so that they will form the proper dihedral angle and cement together. Apply several coats of cement at the dihedral joint to form a cement skin. And for added strength we recommend cementing a 1" wide band of silk over the joint. The upper wing has a 1/16" x 1" wide balsa plate cemented to the underside to correspond to the wing saddle. Add small wedges of scrap balsa to close in this plate. The lower wing has the same type of plate added to the upper surface over the dihedral joint. These can be seen in the photographs. The stabilizer does not have this plate as it rests directly upon the saddle.

Bend the landing gear to

(Continued on page 41)





YOU GOTTA STAY WITH IT!

how

to fly a rubber job



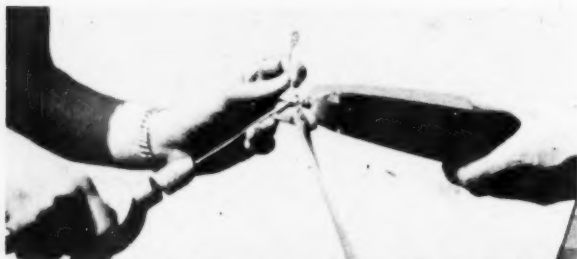
Using a robot camera, Artie Silberberg took this entire series of shots during single flight.



1. Check that chuck winder to see that the hook can't pull loose.



2. And double check it! For big jobs you need a heavy duty winder.



3. Insert winding hook through the prop loop. That's Bob Hatschek.



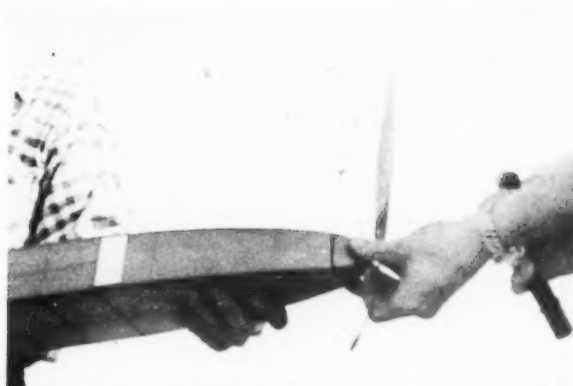
4. Stretch rubber five times ordinary length. Note holder's grip.



5. Put on 50% of the turns, then walk in slowly, still winding.



6. Keep coming in slowly until the full winds have been reached.



7. Insert nose plug. White spot on fuse is identification label.



8. Insert the thrust adjustment. Once known, make it permanent one.



9. Lighting the dethermalizer fuse. Any good model must have one.



10. Bob extends the retractable landing gear. Busy man, isn't he?



11. Check wind quickly and set model down on runway for take-off.



12. For a Wakefield, might as well practice prop, wingtip launch.



13. Airborne and wheel up. You are not a modeler 'til you fly one!

LARGEST SELLER...EVEN

QUALITY makes

outsell all other

- **High Hiding Power**
- **Easy Brushing or Spraying**
- **Excellent Rubbing Qualities**



TESTOR CHEMICAL COMPANY

OWN AT A HIGHER PRICE!



DOPE

brands combined!

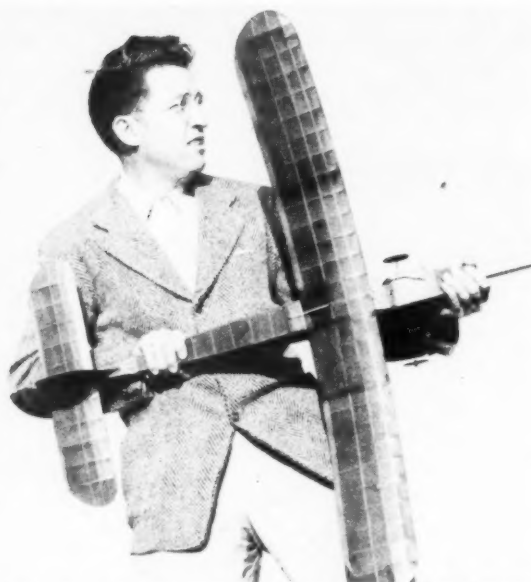


15¢

- High Flexibility
- Film Toughness
- Pure Color Brilliance

ANY • ROCKFORD, ILLINOIS

by Russ Nichols and Carl Wheeley



Insurance people say most cases arise from parking down wind on ff areas. Note fuse for pop-up wing, rubber job held by Andy Petersen.

World-wide Air Force Championships announced • AA Carrier Event rumored by Navy • Election of officers is in full swing • Contests

► AIR FORCE CONTINUES MODEL BUILDING PROGRAM. Already underway are plans for the 1952 Air Force World Wide Model Airplane Championships for members of the regular Air Force, Air Force Reserve, AFUS, and Air National Guard personnel on active duty. Named again as project officer for the Air Force Model Aviation Activity is 1st Lt. Harry G. Vogler, USAF, now stationed at Amarillo AFB, Texas.

Details on how airmen can become eligible to participate in the Air Force Championships to be held at Amarillo AFB from July 9 through 15 are nearly the same as last year. First step is the participation in elimination contests at Base level which are scheduled to be held at most U. S. Air Force Bases throughout the world on or about the June 14-15 weekend. The top men in the Base meets may then fly in Command championships, tentatively scheduled from June 23 to 28. The fifteen best modelers at each Command Championship (18 Commands in all) will then be sent to Amarillo for the big meet. From the winners at the

Air Force Championships, a 25-man team will be chosen to represent the Air Force at the National Model Airplane Championship which is open to all AMA licensed flyers.

This Air Force program is, according to officials, "Specifically designed to further the development of model airplane building and to encourage participation in the recreational model airplane phase of the AF Hobby Shop Program."

A large number of events are planned for the Air Force Championships: AA, A, B, and C ROG-type free flight gas; AA, AB, and C ROW free flight gas; unlimited, Wakefield, and flying scale rubber; hand-launched and towline glider; A, B, C, D, and jet control line speed; combat; AB and CD stunt; control line flying scale; team racing; radio control; beauty PAA Load; and Clipper Cargo.

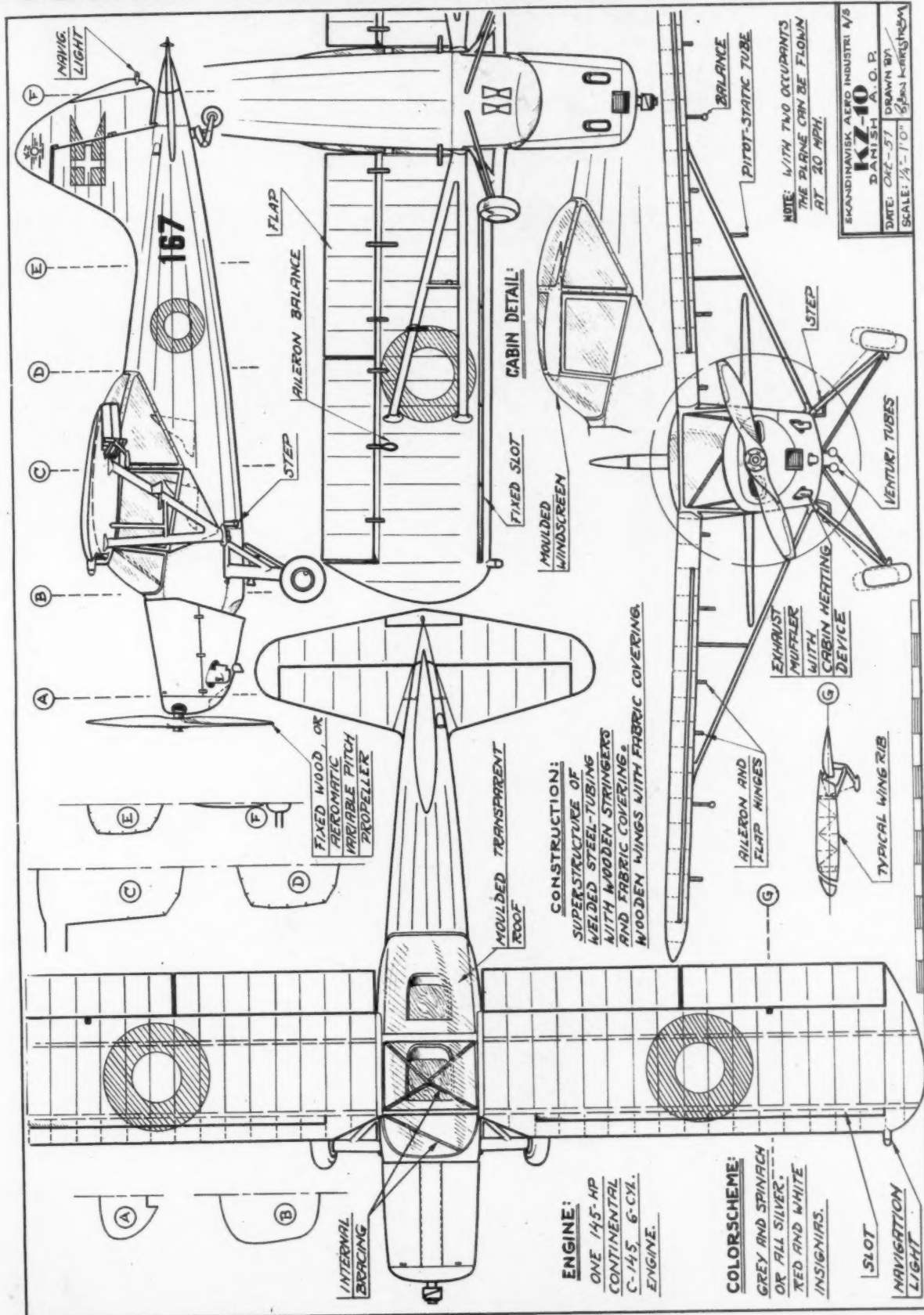
NAVY CARRIER EVENT. Rumor has it that the Navy is planning on expanding their Carrier Event at the Nationals to include a separate class for AA models. If adopted, it is expected that

(Continued on page 47)

Boise Balsa Butchers say they swear by M.A.N. After one look at that wonderful mixture of crates, juniors and seniors, M.A.N. swears by Boise, too.



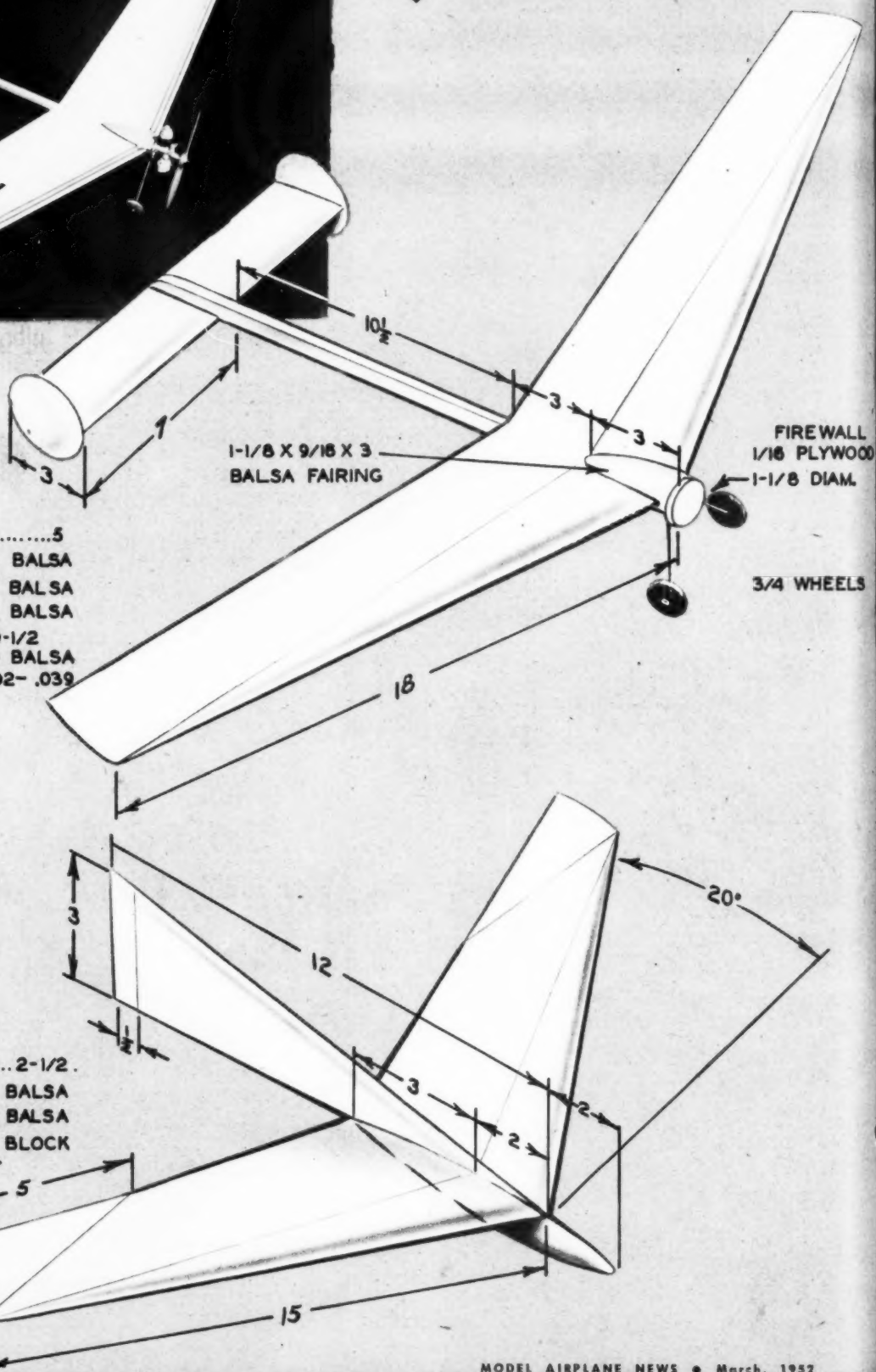
Planes Worth Modeling-KZ-10



Quickies

DIHEDRAL.....5
 WING.....1/8 SHEET BALSA
 STAB.....1/16 SHEET BALSA
 RUDDERS..1/16 SHEET BALSA
 BOOM...3/8 X 1/2 X 19-1/2
 HARD BALSA
 ENGINE......002-.039

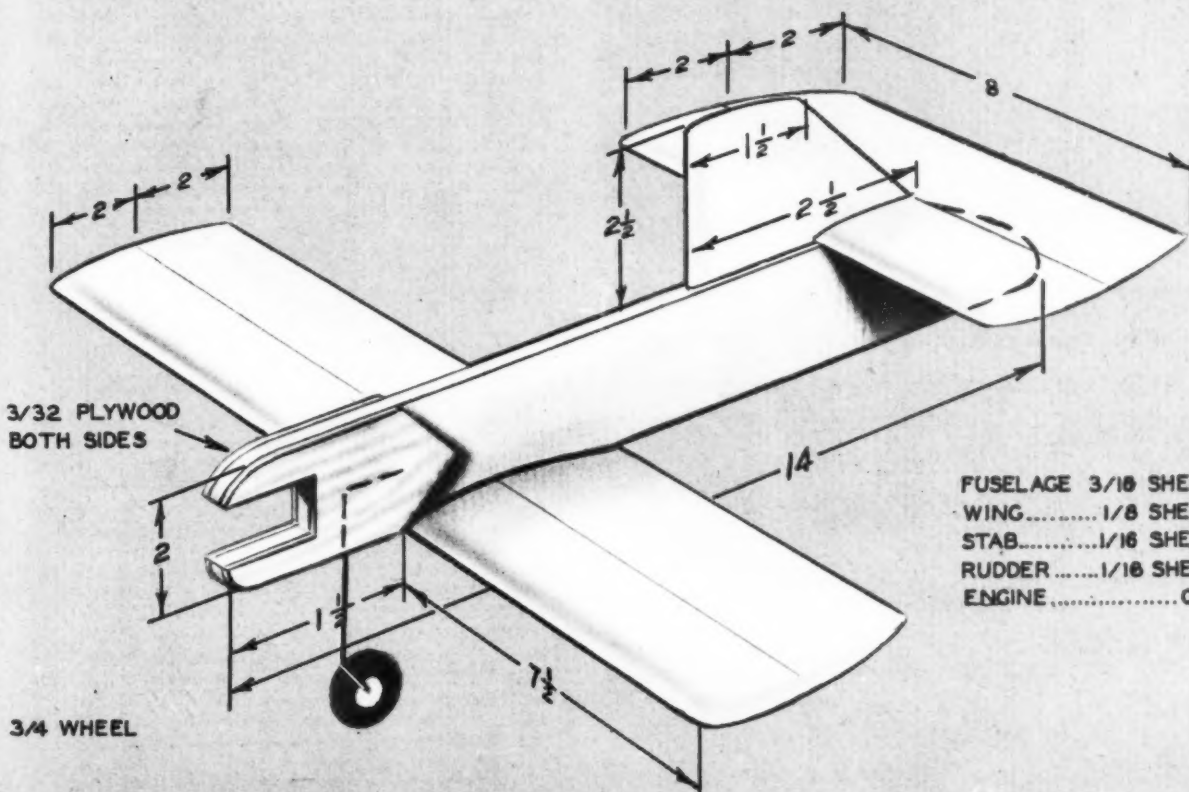
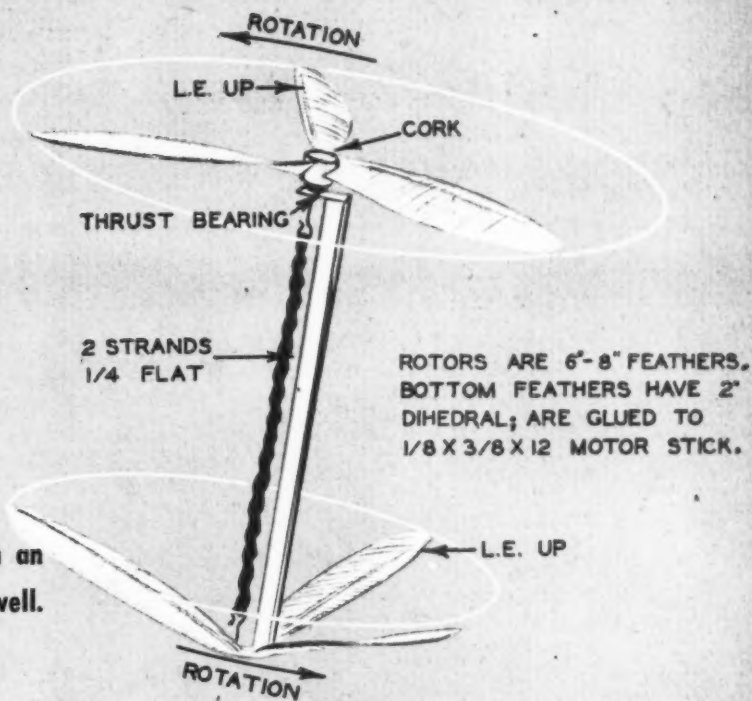
DIHEDRAL.....2-1/2
 WING.....1/8 SHEET BALSA
 FIN.....1/16 SHEET BALSA
 POD.1/8X1/2X7 BALSA BLOCK



WHEELS

3/32 PLYWOOD
BOTH SIDES

3/4 WHEEL



FUSELAGE 3/16 SHEET BALSA
WING.....1/8 SHEET BALSA
STAB.....1/16 SHEET BALSA
RUDDER.....1/16 SHEET BALSA
ENGINE.....0.039-.049

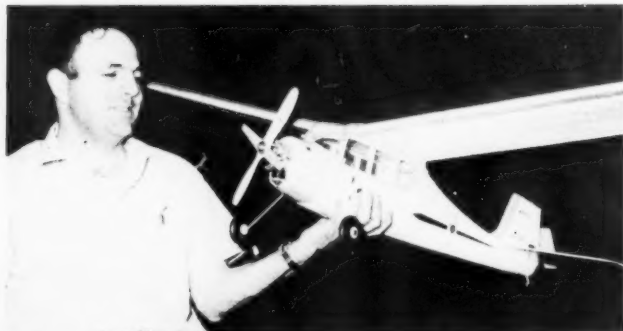
THE JAVELIN

PART TWO



H. A. Thomas launches the Javelin. Hank, in eclipse is at the transmitter.

Winding up the construction, the author checks us out on test flying, handling the radio, more advanced maneuvers and even some aerobatics.



Hank approves the Walker "slow motion" prop as the answer on power tests.

by HANK BOURGEOIS

► Last month we discussed construction of the fuselage and installation of the Ruddervator. Before installation of the radio components, let's finish the wing. The NACA 4412 airfoil section is suitable for fast flying models and has a good all-around performance. The thickness-chord ratio is 12 per cent, allowing fairly deep spars to carry the weight. The center of pressure is at 31 per cent of the chord at CL maximum, and its movement is small, helping the longitudinal stability. Since the undercamber is very small, for ease of construction and covering, the bottom of the section is made flat. It has been impossible to tell the difference in performance between a flat bottom NACA 4412 and a normal NACA 4412. Experience with this airfoil has proven its worth.

The wing ribs are cut from 1/16" medium hard sheet balsa; 28 are required. Note how the trailing edge must be tapered to complete the airfoil. Build the wing on a flat board. The bottom spars are pinned in place, the ribs cemented to them, then the top spar is added. The leading and trailing edges are next cemented in place. It will be necessary to block up the leading edge with small scrap blocks. When the wing structure has dried, remove the wing from the board and shape the leading edge to fit the airfoil, then cover the top of the leading edge with 1/16" sheet balsa. The 1/16" plywood center section braces should be cut, noting that each wing requires nine degrees of dihedral. Block up the wingtips to the nine degrees and add the center section plywood braces. Cover the center section, top and bottom with 1/16" sheet balsa. Slice off the angled trailing edge and shape the bottom of the tip ribs to fair smoothly into the trailing edge. The cut-away wingtips give wash-out on both tips, and delay the wingtip stall. By delaying the wingtip stall till after the center section stalls, a straight follow through on stalls is accomplished, and the ship will not fall off on a wing. More on this later under test flight procedures. Cover the wing with heavy Silkspar and give three coats of clear dope. On the fuselage, the bottom of the wing should be parallel to the bottom longeron of the fuselage. This will actually give the wing about two degrees positive incidence.

Every experienced radio control flier will tell you one of the secrets of successful flying is through a proven radio installation. Keep all wires as short as possible, yet keep the wiring and batteries as far from the receiver as possible. This is a contradiction, and therefore must be compromised. The wiring diagram is shown. Note that there is a common point (called a GROUND) for all wiring circuits. This circuit, made known to your author by John Worth of Control Research, tends to prevent interaction of the wiring and gives better receiver efficiency. It will help cure the majority of poor radio installations. The five prong jack and plug allow removal of the receiver from the ship and is a valuable addition. It can be purchased from a local radio supply house for a few cents.

The 45-volt battery should be installed against the 1/8" plywood landing gear former. A pair of Burgess K15E, 22½-volt hearing aid batteries, connected in series to give 45 volts, can be used. They are larger than necessary and will take many hours of flying and testing. We make a practice of installing them permanently in the ship, a slight charge from one of Herb Owbridge's battery charger keeps them in top shape. (See M.A.N. March '49 for a description of the battery charger.)

For convenience in wiring, remove the 3/16" sheet balsa section from the fuselage just in front of the switch panel. Leave long enough leads on the 45-volt batteries to reach the switches. Mount the two battery cases on the battery platform and cut a small hole for the five prong jack. Follow the wiring diagram closely. Keep all wires short, leaving just enough

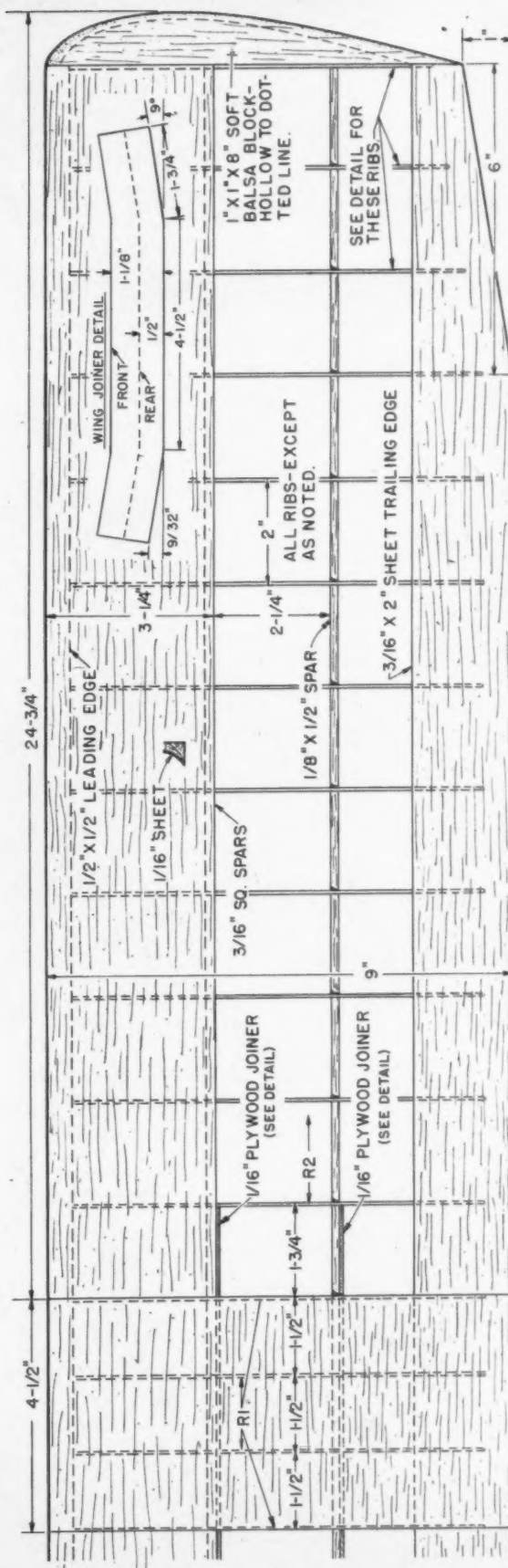
slack to absorb vibration. After completion of wiring, check carefully for accuracy, mount the switches, variable resistor, and meter jack to the plywood switch panel, and cement panel in place on the side of the fuselage. Replace the 3/16" sheet balsa section. The receiver is suspended from 1/16" wire hooks inside the cabin. These hooks should be double cemented and bound to the fuselage with thread. The antenna for the RK 61 receiver is a piece of wire about 30" long. It should run from the receiver to top of cabin through a small hole just behind the wing mount dowel, and then to the top of rudder. NOW IS THE TIME TO CHECK EVERYTHING. Re-check wiring for accuracy and poor solder joints, install receiver and operate with transmitter, wind the rubberband on the Ruddervator and make sure receiver operates it properly. Walk about 100 yards away from the transmitter and check receiver operation. If there is any doubt about not having 100 per cent perfect operation, now is the time to get the bugs out. Follow the radio manufacturer's directions for checks and adjustments. If the receiver works satisfactory alone but not with the Ruddervator turned on, it means the two twisted wires running from the plug to the ruddervator are too close to the antenna of the receiver and must be rerouted along the bottom stringer. If this doesn't help, run the antenna to the tip of the stabilizer. Usually one or both of these adjustments will cure the trouble. In stubborn installations it will be necessary to run the antenna to wingtip; avoid this if possible to keep from having to attach and detach antenna every time wing is removed. Try reversing the polarity of the filaments batteries; in some cases this helps.

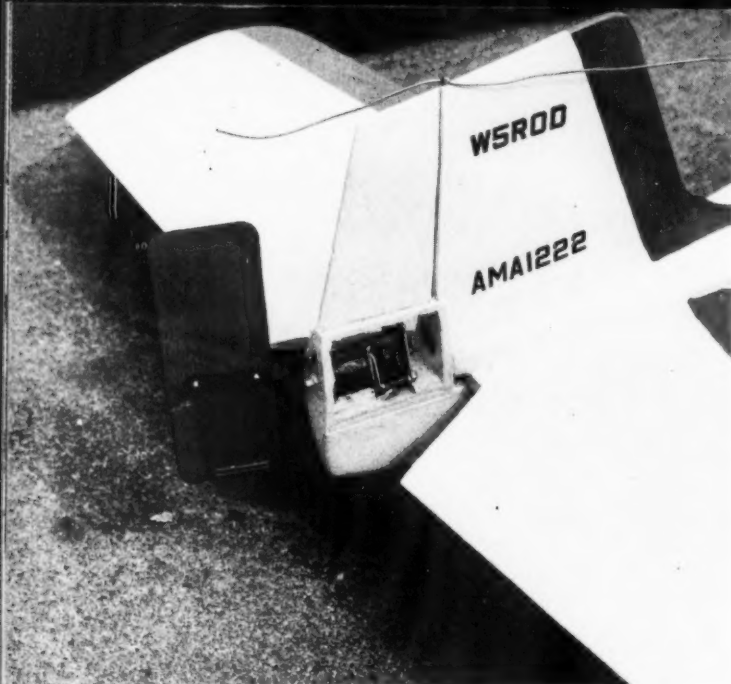
With the radio installation operating satisfactory, we are ready to button up the fuselage. Install the plastic windshield and windows, use a medium heavy grade as it will add strength to the fuselage. Cover the fuselage with heavy *Silkspar* and give three coats of clear dope. When choosing a color scheme, try to avoid metallic paints. Although metallic paint will not effect every case of radio reception, it is a possibility and should be avoided.

The Ruddervator control tab dimensions are shown on the plans; general layout can be determined from the photo. For reliable operation, this tab should be balanced. Notice how the tab is offset on its shaft, and how the short side has one edge bent down. This is necessary to make the tab rotate in the slipstream. Off-setting the tab unbalances it and it must be carefully balanced with small bits of lead.

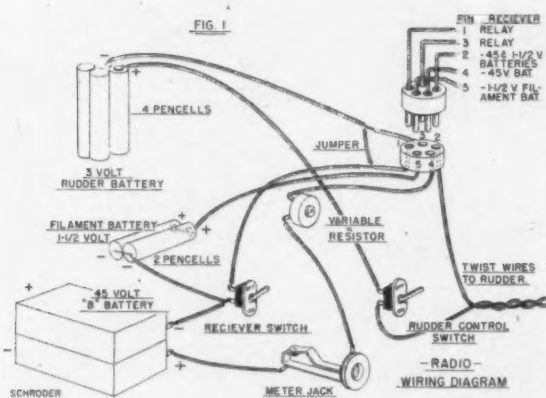
For test flights an anti-thrust, or Slo-motion, metal prop is used. This prop is made from 1/16" sheet aluminum, fits behind the wooden prop and is used to destroy forward-thrust. Glow plug engines cannot be throttled down and run efficiently, so what we do is run them at high rpm and destroy the thrust of the prop with the anti-thrust device. Since the metal prop actually pushes, the blades are bent opposite to a tractor prop. About 1/8" will be enough.

For pre-test flight glides remove the receiver. The first glide is the hardest. For a modeler not used to heavy wing loading, the best procedure is to hold the airplane under the CG, run forward until the model feels light and give a shove forward. Don't be afraid to push, just keep the nose down. What we want is a fast glide with no tendency to stall or mush. Repeat the glides until satisfied. Add incidence to flatten and extend glide, remove incidence to get rid of stall or mushy nose high glide. While making these glides adjust rudder tab for straight flight. Install the receiver, and set up the transmitter as if for a power flight. Repeat the glides, and have someone key the transmitter to give rudder control just before ship touches ground. If there is a positive nose up tendency, remove some incidence. With the rudder control applied in the glide, the ship should start a turn without nosing up. All models built of

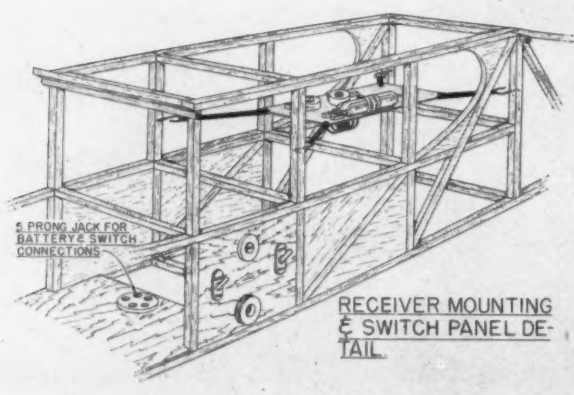




Close-up of Ruddervator which permits advanced maneuvers; various escape-ments can be substituted. For "23" owners a 10 x 6 prop on backwards is plenty.



The installation of the Javelin's radio is a beautiful, practical job which all prospective radio fliers should save for future reference.



the Javelin required zero side-thrust; for the first flight it will be safe to adjust for no side-thrust.

Radio control fliers will argue to judgment day about making the first flight empty, or with the radio installed. I personally prefer the radio installed; it has saved many a radio ship from first flight crash. For an inexperienced flier though, I recommend the first flight be made without radio. Here are the odds. On first flight without radio, the ship either crashes or it doesn't, a 50-50 proposition. With radio installed it either crashes (in spite of radio), flies okay, or can be saved by radio control, a two-to-one chance. However, the inexperienced radio flier may get excited and apply the wrong turn and cause a crash instead of a save, so the odds are back to 50-50.

The first flight should be made on a calm day if possible. Use enough fuel to give about 30 seconds of engine run. Watch carefully for turns under power and in the glide. The ship should be trimmed for straight flight under power and in the glide.

Pre-flight radio check is rigid and should be closely followed before each flight. Check wiring for loose or frayed connections, measure all battery voltages with the receiver operating. A reasonably accurate meter should be used for these checks. The manufacturer's procedure for tuning the receiver should be followed. Check the number of turns in the rubber-band operating the Ruddervator. Check control tab for free rotation, and the Ruddervator for operation with the receiver. Finally check the radio operation with the motor running. The receiver mounting rubberbands may be too tight and transmit engine vibration to the receiver relay, causing faulty operation.

For first radio controlled flight the engine run should be at least 30 seconds and not more than 60 seconds. To gauge the engine runs we use a fuel pump can; five squirts into the tank gives us about 30 seconds of adjusting on the ground and 60 seconds in the air. Nine squirts give us about four minutes engine run, and so on. Check your own pump can for running time. Start the engine, check operation of the controls, and then have a helper hand-launch into the wind. About this time the flier has a lump in his throat and his heart beats louder than the engine; I know, it happens to me all the time. Just remember, if you get confused, turn off the radio transmitter and just watch. The worse that can happen is a long chase. Allow the model to climb to at least 100 feet before applying rudder. Make small turns to observe effectiveness of the control tab. If there is a tendency to snap roll or whip over into a tight bank, use extreme caution until ship lands, then decrease the area of the control tab. Practice S turns the first few flights. When the engine cuts, try to land the ship into the wind. Chances are you will overcontrol on the first few flights, or the ship may land far off. Don't be discouraged; it takes 10 to 20 flights to get used to the control and to overcome nervousness. Increase the engine run to two minutes and continue to make short flights; stick to turns of 180 degrees or less for the first few flights. Note how holding the rudder for 90 degrees will give a 180 degree turn, holding for 45 degrees will give a 90 degree turn.

The control box used is nothing more than a small aluminum box with a eight-pole rotary switch installed inside. The four sides of the box represent the control positions, the four corner positions are the neutral positions. A small handle on the front can be turned (always clockwise) to point to the control positions. The Ruddervator will follow the control handle. With the control handle pointed up, the Ruddervator selector will stop on up. Note that the control box sequence and ruddervator sequence of controls must synchronize. To synchronize in the air or on the ground, apply a control position on control box, observe the flight results on the plane or position of the control tab. Now rotate the control box until the handle points to the control position coinciding with the maneuver of the ship. For instance the ship is in

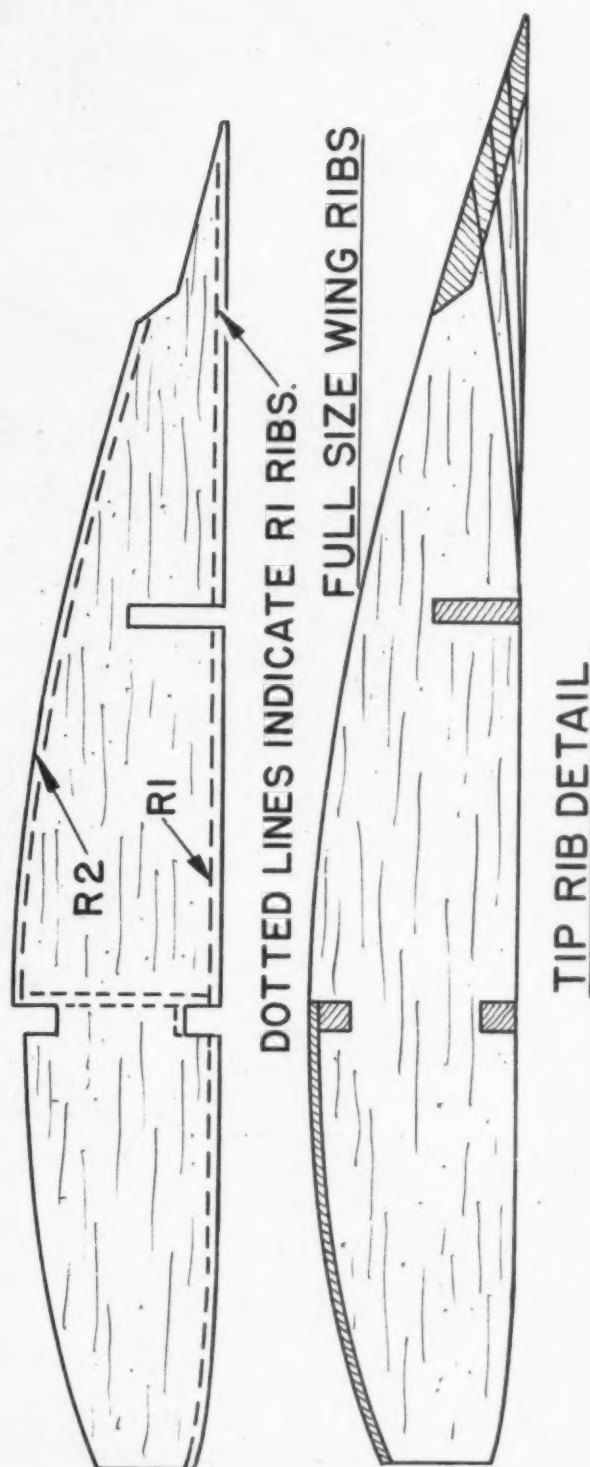
the air about a quarter of a mile away, and you believe you are out of "sync." Apply a control position on the control box. Let's suppose it's the down position, but the ship turns to the left, so you rotate the control box until the handle points left, you are now back in "sync." Flying can also be done with a simple push button to key the transmitter; however, the pilot will have to remember the control sequence in his head.

After a little experienced is gained in the primary stage of simple turns, it is time to progress to the intermediate stage of flight training. During this phase concentrate on flying square patterns, both left and right, practice figure eights, spiral dives, and spot landings. Don't be just another pilot hanging on to a button, be the boss, make the model do what you want. Do you think it's easy to make a good smooth figure eight? Well just give it a try. Use a seven or eight minute engine run for these flights. Practice your turns as the model climbs, concentrate on stopping turns with the model ending on desired headings. Remember, you have to release the turn control before the model reaches the desired heading. In addition, if a 360 degree turn is desired, you have to blip or pulse the right rudder position. Hold right rudder until the nose starts to drop, then release. Now apply right rudder again, keep blipping the control until the ship approaches the desired heading. By this time enough altitude will be reached for a spiral dive. Hold right rudder, the nose will begin to drop and finally the ship is in a screaming spiral dive. Three turns are plenty, release the rudder control, the ship will pull itself out and climb sharply, finally stalling. Note the number of turns it takes to recover from the point of released control, and also the heading.

A spot landing that really comes close is one of the hardest and most satisfying maneuvers to perform. It takes practice and plenty of head work. The secret is to follow a definite landing pattern each attempt. One method that gives consistently good results, I call the Point X-Ray approach. Point X-Ray is directly over the desired landing spot about 150 feet. The object is to pass through Point X-Ray headed into the wind, then start a series of four left-hand turns (the old square pattern). Loose altitude going crosswind on the first leg; the downwind leg should be short. Watch the wind drift on this one. The third leg, crosswind again, brings the model back toward the landing spot. Here is where pilot headwork comes into play. If you have too much altitude, then go past the spot and loose a little more. This will require an S turn to the landing. With too little altitude, cut across the corner to shorten the flight path. The perfect pattern will place the ship about 50 feet downwind from the spot and five feet off the ground. You think it won't reach? Remember your ace in the hole, the elevator. About one foot off the ground apply up elevator and the ship will flare out and plunk in three point right on the spot. It takes many practice flights to come consistently close, but the results are worth it.

Advanced stage practice involves wingovers, loops, and immelmans. Before performing these maneuvers the front edge of the Ruddervator should be raised 1/8" as described in last month's article. It may be necessary to use a slightly larger control tab. Try a test flight with the old one first; if control response is not enough make a larger control tab. Use a 10-minute engine run for these flights and get a lot of altitude. Try the loop first. Apply down control. The ship will nose down into a 45 degree dive and build up speed. Notice that as speed is built up the dive angle decreases. Allow the ship to lose a couple of hundred feet of altitude, release the down and apply up. If enough speed was built up the ship will go over in a neat round loop. It will be necessary to hold the up all the way through the loop, releasing when the ship is almost

(Continued on page 44)



Here's Why Cleveland Is Tops In PREFAB SCALE



EACH
59¢
ALL 6 FOR
\$3.50

Quickie sets

"QUICKY" SETS BUILD FASTER, LOOK MORE REAL, AND FLY BETTER THAN ANY SIMILAR MODELS! No cutting, no covering, no painting! — Just assemble and fly! Believe it or not, it can be done in just 18½ minutes! The parts are colorfully decorated in realistic detail just as they come. A one-piece completely finished, 18" wing, and a big, indestructible plastic prop, plus the lightness and ruggedness that result from their ultra-simplicity all go to make them tops. They are engineered to fly several hundred feet! Buy 'em all, build 'em all and fly 'em tonight — you'll have the time of your life!



Only 12 parts to cement!

- DIECUT CURVED BALSA PARTS
- SHAPED WING EDGES
- FORMED PLASTIC CANOPIES
- INTERLOCKING TYPE CONSTRUCTION
- THREE-COLOR DECALCOMANIAS

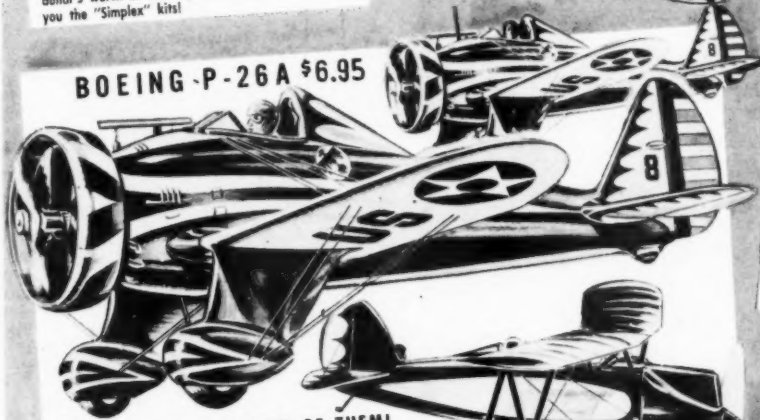


15" LOCKHEED F-90

RUGGED, REALISTIC, PROFESSIONALLY PREFABED, THESE NEW "SIMPLEX" KITS ARE MASTERPIECES OF PREFAB FLYING SCALE — QUICKLY, EASILY ASSEMBLED. These 3 sleek jets are among Uncle Sam's most talked about, most promising fighting jets, and you'll see them in the headlines, and in the newsreels every day. Ask your local hobby dealer right away, for the biggest dollar's worth of model yet to be seen! — He'll show you the "Simplex" kits!



15" VOUGHT CUTLASS



BOEING P-26A \$6.95

BUILD THESE, AND BE PROUD OF THEM!

- Almost one sq. ft. of decals in P-26A! • Shaped, tapered, notched trailing leading edges • EVERYTHING diecut! edges • Preformed wire • Preshaped wing
- Giant cowl turning (P-26-A) • Easy interlocking bulkheads and keel construction (or notched sheet sides) • Routed-out wheel shoes • Tails are diecut sheet • Handy Bulkhead notcher in ea. kit • Stunt and sport rib (symmetrical) • Many other outstanding features.

\$5.95
GREAT LAKES TRAINER

STILL MANY GREAT BUILT-UP, PRINTED BALSA DESIGNS FOR THOSE WHO WANT TO PUT REAL CRAFTSMANSHIP INTO THEIR MODEL BUILDING!



24" F-51 MUSTANG \$1.50

POKKEE D-7 Span 17¼" \$1.75

LUSCOMBE SILVAIRE 43" Span \$3.00

SPAD XIII Span 19" \$1.75

24" F-86 SABRE \$1.50

30" ERCCOURT \$1.25

30" GRUMMAN LANTHER \$1.50

30" F-80 SHOOTING STAR \$1.50

30" STINSON VOYAGER \$1.25

WHEN ORDERING BY MAIL: (If your dealer is out of stock) Do not accept substitutes for C-D's but order direct. Orders under \$2 not accepted. (No C.O.D.'s) Include 35¢ pack-post. to all orders up to \$3.50, over \$3.50 add 10%. (This includes A.P.O. and U.S. Possess.) Foreign customers add 10% for special handling, etc., in addition to pack-post. charges. Special Delivery in U.S.A. only, 35¢ extra. Ohio residents: add 3% Sales Tax. Send 3¢ coin for illustrated airplane circular.

CLEVELAND MODEL & SUPPLY CO.
4508 C I Lorain Ave
Cleveland 2, Ohio, U. S. A.

FLASH for 1952

Capable of handling Torp .19



\$4.50 By mail \$4.75

SUPER FLASH

Designed to handle power
Easy to adjust, easy to fly

Class A-B .19 to .24 engines

Designed by Frank Ehling

For other famous JASCO gas models see your dealer. If he cannot supply you order direct.

Class 1/2 A

Phoenix Imp	\$1.25
Little Twister	\$1.50
Baby Phoenix	\$1.75
Phoenix Flash	\$1.75
Phoenix Skipper	\$2.25

Class A

Junior Phoenix	\$2.25
Super Flash	\$4.50

PAA Load

Lift Master	\$2.25
PAA Master	\$2.50

By mail add 25¢ per kit

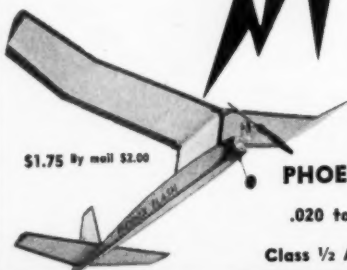
Jasco quality balsa

Shaped trailing edges

Shaped leading edges

Excellent die-cut ribs

Pop-up dethermalizer



\$1.75 By mail \$2.00

PHOENIX FLASH

.020 to .049 engines

Class 1/2 A Wingspan 32"

JUNIOR AERONAUTICAL SUPPLY CO.

203 East 15th Street,

"Pioneers in Model Aeronautical Developments"

N. Y. 3, N. Y.



Sweeping the Country!

Where Horsepower Counts—It's Wasp!!!

In 1/2-A competition from Coast to Coast the Wasp is the favorite power plant with contestants. The Winners' Circle finds Wasp powered entries taking home the hardware. In Free Flight, U-Control, and Payload events the Wasp powers more winners than any other engine. For Sport and Pleasure flying, too, the easy starting, dependable, powerful Wasp is the choice of beginners and experts.



Wasp.049

DISPLACEMENT

Free Flight Combination	\$6.75
U-Control Combination	6.50
Back Cover50

Your dealer has probably already suggested Wasp to you if you're in the market for a 1/2-A engine. The clean lines and lightest-weight-per-horsepower give the Wasp an advantage other engines in the class can't match.

**If YOU want a WINNER
—Get a WASP**

ATWOOD MANUFACTURING CO. PICO, CALIF.

20 YEARS AGO

The great debate over whether Roy Brown downed Richthofen or ground fire got the German ace as he squirmed his bright red triplane low over the lines to evade Brown's Camel, was settled in March 1932 M.A.N., just twenty years ago, by J. Noble, who turned out a corking story filling in the details of that March 22, 1918 morning. Brown's flight of five Camels had been on bomber escort then caught the dreaded German Flying Circus by surprise.

That March 1932 issue was the second edited by Charlie Grant. Another then-future M.A.N. editor, Howard McEntee, had a featured flying model in the same number, a cute little rubber-powered SE-5. Span was only 16 inches and, like all flying scale jobs of that day, a motor stick was used to carry the strain of the wound rubber motor. Two wire clips, one in front and one in back, inside the fuselage, permitted withdrawing the motor stick for winding. Once wound, it could be slid into position, then pushed down into the clips. No one used to dare throw the strain of the rubber on the longerons. But look what they do today!

Air Ways, the popular monthly presentation of pictures of models built by readers, also was two months old exactly twenty years ago, making Air Ways, today, one of the oldest regular features in the model airplane field. Air Ways then embraced "The American Sky Cadets" (Correspondents Wanted) which reported widespread activities. At that time, for example, Irwin Polk was director of the Bamberger Aero Club, Newark, N. J., an active outfit which held virtually every record on the eastern seaboard. If you ever wondered where that title "Air Ways" came from, the March 1932 file copy provides the clue. Under the title "Air—Ways, Here and There," was a subhead that said, "Get busy and 'Air' your 'Ways' of building and flying model planes. Let others know what you are doing." And that is still the general idea.

Ever since the early pioneers of aviation studied bird wings, designers of both big and little planes were airfoil conscious—they still are! Twenty years ago, Stockton Ferris, best remembered for his series of World War three-views, showed 17 sections with ordinates. The modern "NACA" sections were foreshadowed in that collection by the NACA Munk-8, one of the two convex lower surface sections drawn by Ferris.

A good compressed air engine made the 1932 modeler yearn the way today's scale fan yearns for a rare item like the Elf Four. For 1932 was the depth of the depression and even two-bits worth of material was out of the question for many enthusiasts. Quite a few M.A.N. readers must have drooled over a four-cylinder gem offered by Miniature Aircraft Corp., New Brighton, N. Y. At 1,500 rpm, this engine put out 1/10th horsepower, plenty for a six foot ship. Price was \$5.90.

Cleveland Model & Supply Co., offered a flying model kit of the Keystone Pirate bomber, one of the last of the two motored biplane bombers of the era. Span was 28 inches and two motor sticks were used, one being inserted through each nacelle and reaching almost to the tail. The Great Lakes Sport Trainer appeared in the same ad, also for \$2.50. That Great Lakes, outside of the Curtiss Hawk, probably was the most popular flying scale model of all time. Even today, the same firm has a control line kit of the same job for scale addicts.

That March 1932 cover was a wow of a battle scene by the Australian artist, Gerald Muir. In keeping with the Brown-Richthofen story inside, the painting showed a Sopwith Camel blasting a well-sieved Fokker Triplane. In the background melee, a couple of more Tripes were engaged in violent evasive tactics. As in the westerns, the "good guys" always got the "bad guys!" But Sabres or Migs, Camels or Tripes, the enemy is always dangerous. Both then and now, air supremacy is a compound of plenty of the best planes as well as the best airmen.

THE END

The Play Plane

(Continued from page 25)

shape from 1/16" diameter wire. Vary the length to suit the size prop you intend to use. Note that the wire runs up the side of the fuselage, through it, and down on the other side. Bind and cement the gear to the fuselage. Sew the thread right through the fuselage and around the wire. Wheel size and shape is optional but we used large 1-3/4" diameter hardwood flats.

The entire model is given one very thin coat of clear hot fuel proofer that has had a little castor oil added to make it more plastic. Paint the cabin black for realism and add whatever trim color you desire.

Before attempting power flights, glide the model a few times without the prop in place.

Correct the glide path with changes in the stabilizer incidence or by small weights. Power adjustments are made by altering the thrust line with the aid of shims or thin washers. The original model climbed in large left circles (with torque) and at a very sharp angle. The angle of climb did vary directly as the wind. Anything over a five mile wind and the model looked as if it were going straight up.

Planes in the News

(Continued from page 19)

Gross weight tops 40,000 lb. Engines are by Allison—they are J-35 turbojets with afterburners.

For performance, the Air Force gives us the same old razzle-dazzle—over 600 mph, and operations above the 40,000 ft. level. Leave us hope, to use the vernacular, that those figures are really well over 600 and 40,000.

► **Gloster GA 5**—And on the other side of the Big Pond, the British have rung up another notable first. They've flown the world's first twin-jet delta-wing fighter, the little Gloster GA 5. (Delta-wing means that the shape of the wing, when you look down on it, is triangular with the point first. It's one solution to the problems of flight at very high speeds around those of sound. But it's not a cure-all—so don't expect to see the sky full of those strange craft.)

The GA 5 is in direct competition with another British craft, the De Havilland 110, of more conventional layout. The DH 110 follows the style set by the Vampire of boom-tail and big wing. And the Royal Air Force is going to compare before they buy. Informed people are betting that the RAF gets the DH job first, later the Gloster. Reasons behind this thinking are several, including the present state of the art of conventional versus delta-wing craft, the problems of produceability and the number of bugs to be chased out of designs.

The Gloster job is not actually a pure tail-less craft, as delta-wing jobs can be. It is fitted with a temporary horizontal tail, which presumably will be removed when flight tests say that it's okay to do so. Otherwise, it's reminiscent of the Avro 707 series of delta-winged research craft, from which Gloster drew much experience in preparing their design.

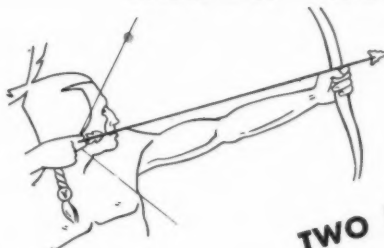
The GA 5 is a venture of the several member companies of the Hawker Siddeley group, including Gloster, which built the airframe; Armstrong Siddeley, which supplied the twin Sapphires turbojets which power the plane; and A. V. Roe, whose pioneering research and construction with several delta-wing aircraft contributed to the aerodynamic knowledge behind the GA 5.

Gloster considers its latest as a modern Meteor, which has about a decade of modifications to its credit. Everytime somebody comes up with an engine, it's tried in a Meteor. And once in a while, Gloster changes the shape of the tail, or lops off some wing, or trims down the windshield slope, and there's a new mark Meteor.

That's what they'd like to do to the GA 5. As more powerful engines come along, Gloster has the airframe to take them. "Any foreseeable powerplant" is the way their release of information put it. And if it follows in the Meteor's footsteps, the 1961 Farnborough display should be, to borrow a phrase from our President, a dinger.

Fly to WIN with

ARROW TRUE



EASY TO BUILD, EASY TO FLY

TWO NEW CONTEST PLANES

COMANCHE

1/2 A Free-Flight Contest Model
(PAA load included)
DE-THERMALIZER EQUIPPED

If you want outstanding flying performance, switch to Veco now! The new Comanche has already proven itself a "winner." All parts prefabricated for easy construction. Built for 1/2 A class engines .035 to .074 displacement. Wing span 36"—Wing Area 180 sq. in.

THE COMANCHE



THE NAVAJO



NAVAJO

1/2 A Pylon Type Free-Flight
Contest Model
DE-THERMALIZER EQUIPPED

Like all Veco Planes — A Model for Every Purpose — the new Navajo represents the last word in flying performance. Months of flight testing proves it! Designed for 1/2 A class engines of .035 to .074 displacement. Wing span 36" — Wing Area 160 sq. in.

Stop guessing! Standardize on Veco. Start placing "in the money." Buy Veco kits from your dealer now!

Aerodynamically Designed,
Engineered and Flight Tested for
outstanding flying performance.

That's why Veco Pre-Fab Models
win flying contests constantly.

CONTROL LINE KITS

FREE-FLIGHT KITS

- Brave
- Warrior
- Chief
- Squaw
- Papoose
- Scout
- Dakota
- Sioux
- Comanche
- Navajo
- Taylor Cub



SOLD BY LEADING DEALERS EVERYWHERE

Planes • Engines • Propellers • Wheels • Accessories

HENRY ENGINEERING CO., BURBANK CALIFORNIA

ADD THE "SPIRIT OF THE WEST"
To Your Collection
YOU WILL WANT ALL OF THEM

COMPLETELY
PREFABRICATED
WITH METAL, PLASTIC
AND DIE CUT PARTS

Ideal
MODELS

**PIONEER
TRAIL**

AUTHENTIC
"Easy to
Assemble"
KITS

STAGE COACH
The famous Wells Fargo Stage Coach which carried U.S. Mail and Gold shipments. No. 501
\$150 COMPLETE

BUCKBOARD
Famous wagon of the "Golden West" No. 503
\$150 COMPLETE

COVERED WAGON
Famous as the wagon used by the pioneer's to California. No. 502
\$150 COMPLETE

See your Dealer today or Order direct
Add 25¢ for postage, handling. No C.O.D.'s please

IDEAL MODELS
20-24 WEST 19th ST., NEW YORK 11, N. Y.

**PRESENTING THE
BIGGEST
ROUND-UP
in the
WEST!**



- SHIPS • PLANES
- BOATS • ENGINES
- CARS • TOOLS
- KITS • CRAFTS
- RAILROAD SUPPLIES
- HOBBIES

**MODEL
KITS and
SUPPLIES**

WESTERN MODEL
Distributors
LEADERS
SINCE 1933

TWO CONVENIENT WESTERN LOCATIONS

LOS ANGELES OAKLAND
1576 West Adams Blvd. 1106 5th Avenue
Los Angeles 7, Calif. Oakland 6, Calif.
Phone: PARKway 2161 Phone: TEMplebar 4-9171

► **Jack-of-All-Skyraiders** — There's a neat gimmick behind the production of the latest model of Douglas' *Skyraider*, the AD-5. It looks like the earlier models, and with a minor conversion or two in the field, it can do anything any of them did.

Thanks to a universal chassis and a number of field kits, the AD-5 will be able to hunt subs, tow targets, take photos, drop bombs and carry litters.

General lines of the *Skyraider* series have been kept, with one minor exception—vertical tail has been heightened. The cockpit arrangement is different and the crew enjoys the luxury of direct communication. (I don't know what that means, exactly—it's what Douglas said—but if the crew couldn't communicate before, that was no way to build an airplane. I think they mean that the crew can now, if necessary, scratch each other's backs.)

Anyway, the *Raider* can carry the same terrific loads which have been slung on it during the Korean fracas, which means up to 8,000 lbs. It has four wing guns, and underneath carries rockets, bombs, torpedoes and napalm.

Take-off horsepower of the *Skyraider* is 2,400 hp., from a Wright R-3350-26W reciprocating engine.

► **Trainer-Transport**—Out in Wichita, Kansas in the Beech Aircraft Co. factory, there is a shiny, all-metal mockup of the T-36, Beech's advanced trainer-transport. Four months after Beech got the order, the mockup was ready. It looks like the real thing, and Beech learned a lot about the real thing while making the model.

Indicative of the tempo of the times is the speed of the T-36—it's to be on a par with piston-engined fighters of World War II, around 400 mph. And it should go that fast. The plane weighs something more than the perennial Douglas DC-3; and it has two big, fat Pratt & Whitney R-2800 engines putting out 2300 hp. each for take-off.

Its job is to train crews as navigators or pilots. Three students and one instructor will occupy the craft during such use. And as a transport, the T-36 will carry two crew, and 12 passengers.

Dimensions: span, 70'; length, 52' 2". And looks? The style is that of a Convair 240 with the cockpit borrowed from a De Havilland Dove and set back a little further. Clean it is, and sleek. Beech has a winner.

► **Bits and Pieces**—Forgot to give dimensions for the baby Auster last month. Here they are: span, 37', length, 24' 8". . . . By this reading, Douglas' X-3, supersonic research craft, should be flying. Bill Bridgeman, who gained wide renown as a result of his records in the *Skyrocket*, will be the space jockey for these runs. And for you followers of Tom Corbett (and this includes me), Bridgeman is the first man to have flown under the conditions found in space flight. That means dangerously low oxygen content of air, temporary loss of gravity, exposure to radiation and

MR. DEALER—

Prepare your stock
for the big summer
season. See our lines now!
now!



WRITE FOR YOUR
CATALOG. REPLIES
WILL BE MADE TO IN-
QUIRIES ON OFFICIAL STA-
TIONERY ONLY.

mod Kraff Co

840 Union St., New Orleans 12, La.

NO OTHER MODEL ON EARTH
will give you the detail of a Dyna-Mo Solid I

Jam-packed with metal castings, every little detail visible in the actual airplane — every single item that can be reproduced — is given to you.



P-47 THUNDERBOLT . . . \$2.95

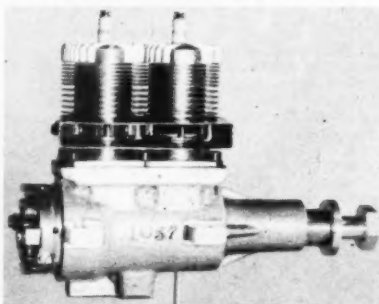
British Spitfire	\$2.75	P-51 Mustang	\$2.75
PW-190 Focke Wulf	2.75	F6F Hellcat	2.75
P-40 Warhawk	2.75	F8F Bearcat	2.75
F4U Corsair	2.75	P-38 Lightning	3.50
ME-109 Messerschmitt . . . \$2.75			

DYNA-MODEL'S NEW JETS — READY JANUARY 1st

F-84 Thunderjet	\$2.75	P9F Panther	\$2.75
MiG-15	2.75	F-80 Shooting Star	2.75
F-86 Sabrejet . . . \$2.75			

DYNA-MODEL PRODUCTS COMPANY
76 SOUTH STREET, OYSTER BAY, NEW YORK

PAL "55"
FOR SMOOTHNESS AND POWER



Weight 15 oz. Displacement .55 cu. in.
\$62.50 Ignition & Glow Plug **\$49.50** Glow Plug Only

DEALER INQUIRIES INVITED

PAL ENGINEERING LTD.

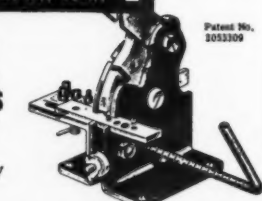
53 16TH AVE. S.W., CEDAR RAPIDS, IOWA

4 TOOLS IN 1
The Complete
METAL WORK SHOP
FOR HOME AND PLANT

**IT FORMS
SHEARS
PUNCHES
RIVETS**

Introductory
Price

**ONLY
\$6.95
DELIVERED**



Ideal for hobbyists, craftsmen, radio repair, metal shops, garages, bicycle repair shops, model manufacturers, experimental laboratories, etc. Check must accompany order. Money refunded if not fully satisfied.

Dept. 107

ALBERT J. TATU

85 Columbia Dr., Williamsville, N. Y.

all the rest. . . Britain's Saunders Roe Princess, one of three gigantic flying boats being built in memory of the days when England was a sea power, has been rolled out of the hangar for final fitting before launch. Six years the center of controversy, the Princess boats are to go to work for the Transport Command, hauling troops around from hither to yon. . . Interesting little sidelight on the British-U.S. jet superiority question. Towards the end of November, Mr. F. B. Rentschler said that this country was ahead of Britain because we worked on axial-flow engines while the British were fooling with centrifugal types. Mr. Rentschler is chairman of the board at Pratt & Whitney, which makes axial-flow engines of its own design, and centrifugal-flow engines of British design. A few days later Dr. Hugh Dryden, top man at NACA, said that in about six months or so we'd catch up to the British in this jet business. Whom do you believe? The question is like asking which made better paintings—Rembrandt or De Vinci. They both were good. And right now, the real answer is that mediocre engines in service and rolling out in quantity, are worth far greater numbers of top-notch engines still in an experimental shop. Bang them out, then come back and tell us about our superiority! (Pictures courtesy Aviation Week.)

THE END

LENS HOUNDS

\$10 awaits lucky contributor who sends in best picture each month for Air Ways. Glossy prints, 4" x 5" min. One year subscription awarded next two runner ups. Mail pictures to: Photo Editor, Model Airplane News, 551 Fifth Ave., New York 17, N. Y.

You Can Build SLICKER STURDIER MODELS



with PLASTIC WOOD

PLASTIC WOOD molds right into the lines of your model. Won't chip, crack or split! Handles like putty . . . hardens into wood. Can be carved, sawed and sanded. Ready to use. Takes dope or paint.

YOU'LL WANT Plastic Wood Solvent, too! Makes a perfect filler when mixed with Plastic Wood. Solvent removes Plastic Wood from tools and hands. Solvent is also used as a dope thinner!

FREE BOOKLET

"Slick New Tricks for Building Better Model Planes." Ask your local model dealer or write Boyle-Midway Inc., 22 E. 40th St., New York 16, N. Y.



Swirl
for patching
broken balsa.
Tube or Can



T.M. REG.
U.S. PAT. OFF.

PLASTIC WOOD
A CELLULOSE FIBRE FILLER

KEEP YOUR EYE

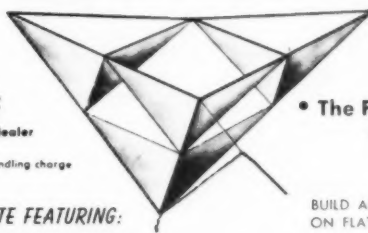


"Sputfire"
PRODUCTS

AT YOUR
HOBBY DEALER
IN 1952

MEL ANDERSON
Manufacturing Co.
1347 WEST 14th ST., LONG BEACH 13, CALIF.

HERE'S THE LATEST!!



Firefly

45¢

At your dealer
By mail—
add 16¢ handling charge

- The Fastest Climb
- Flies the Highest
- In Lightest Breeze

THE KITE FEATURING:
BALSA WOOD STICKS
PLASTIC COVERING

BUILD AND COVER
ON FLAT SURFACE



ADD DIHEDRAL ANGLES



HAVE YOU FLOWN THE THUNDER BOLT ?

NOW! . . .

a man-sized kite that you can actually maneuver . . . perform stunts at will . . . with perfect control . . . it's KING OF KITES



Vertical Dives
Horizontal Flight
Speed Dashes
Figure Eights
Spot Landing
Loops

Replacement parts available.

ROBEY SPECIALTIES
2836 Westbrook Ave., Indianapolis 21, Ind.

ONLY \$1.50
At your dealer
By mail—add 15¢ handling charge

**BIG
3½ FT.
TALL**

DYNA-JET

FAMOUS JET MINIATURE
GASOLINE ENGINE

THE Super Engine . . .



4 1/4 lb. Thrust
16 oz. Weight
21 in. Long
2 1/2 in. Diam.

No Wartime Shortages

For Dyna-Jet Owners

- WILL NOT WEAR OUT! No bearings, shafts, rods, pistons, cylinders to wear out or require replacement. Your Dyna-Jet will still run like new after many years of use.
- NO SPECIAL FUELS REQUIRED! Runs best on plain gasoline. Does not use war scarce nitro chemicals or methanol.
- NO PROPELLERS TO REPLACE!

JET PROPULSION! The greatest development in the field of aviation. Be modern, gain enjoyment plus knowledge with the world's finest miniature engine!

SUPER POWERED! More than 4 1/4 lbs. guaranteed thrust . . . the equivalent of 3 HP at 190 mph with 70% propeller efficiency . . . 1948 AMA speed record of 179.03 mph.

EASIEST STARTING! Most practical and reliable engine ever built. No propellers to break. No ignition system to burden your model. No bearings to wear out. No expensive, special fuels to buy or mix.

MOST ECONOMICAL! Will not wear out. Constant high resale value. Savings on propellers and fuel alone pay the difference in cost between Dyna-Jet and cheaper engines.

OFFICIALLY ACCEPTED! Accepted for contests by AMA, and by modelers the world over.

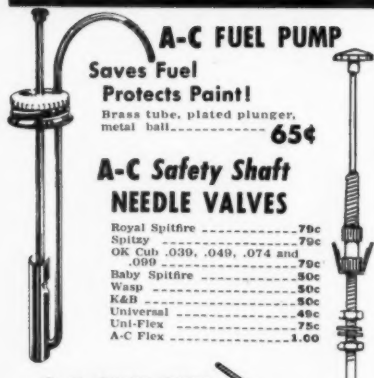
HOLDS ALL WORLD RECORDS for Jet models.
GUARANTEED! 1. To start easily with hand tire pump. 2. To equal or exceed the advertised thrust. 3. Against defective materials or workmanship.

\$35.00 at your Dealers. If he can't supply, order direct. Immediate Delivery!

Shevlin MANUFACTURING COMPANY

DAYTON MUNICIPAL AIRPORT • VANDALIA • OHIO

Austin-Craft WORLD-FAMOUS ACCESSORIES



A-C FUEL PUMP
Saves Fuel
Protects Paint!
Brass tube, plated plunger, metal ball. **65¢**

A-C Safety Shaft NEEDLE VALVES
Royal Spitfire 79¢
Spitzzy 79¢
OK Cub .039, .049, .074 and .090 50¢
Baby Spitfire 50¢
Wasp 50¢
K&B 50¢
Universal 49¢
Uni-Flex 75¢
A-C Flex 1.00

A-C GLUE GUN
For hard-to-get-at places. Handy for greasing model R.E. engines . . . filling baby engines **75¢**

A-C Fuel Saver Pump Can
All-metal construction. Positive action pump also makes handy oil or solvent can. **75¢**

at dealers everywhere

AUSTIN-CRAFT
431 S. Victory Blvd., Burbank, Calif.
Enclosed find check (cash or Money Order) for: _____
Please send articles checked above.
Name _____
Address _____
City _____ Zone _____ State _____

Buy Where You Find THIS SEAL



IT ASSURES YOU THE
BEST AND NEWEST . . .
plus FRIENDLY SERVICE

The Javelin

(Continued from page 37)

level, then applying down to prevent the stall. An alternate method of entry into the loop is from a spiral dive; here opposite rudder must be applied before up to stop the turn.

Entry into the Immelman is similar to the loop, only when the ship reaches the top of the loop and is inverted, left rudder is applied. The ship will roll out into level flight. Try both left and right roll outs, one may be smoother than the other.

Wingovers are the hardest and prettiest of the airborne maneuvers. Once perfected they may be done close to the ground. First apply down control and allow the ship to lose 50 feet of altitude, then apply up. When the nose is up about 45 degrees, apply right rudder, the airplane will roll over in a right turn with the wings almost vertical and the fuselage parallel to the ground. Let the nose drop continuing the turn, until the ship is headed in the opposite direction from the initial entry; now stop the turn with left rudder, and then apply up again. Up comes the nose to the 45 degree position and left rudder is applied, finally stopping the turn with right rudder and so on through as many wingovers as desired. The result should be a series of 180 degree turns, right and left, with the first 90 degrees of each turn being a climbing turn and the second half being a diving turn.

Other maneuvers are possible with the Ruddervator, depending upon the capabilities of the model and experience of the pilot. The ones described are the most useful. After the pilot feels at home on the controls try full tank flights and cross countries. Add more downthrust and use a high pitch prop, about 9" dia. 8" pitch on the Ohlsson .19 will give plenty of forward speed in level flight, particularly useful on windy days. High pitch props tend to dampen the stall as they begin to lose thrust as speed goes down and the ship sort of rides through the stall.

The space above the fuel tank will be used for a motor control, as yet not installed because we still enjoy just flying. Anyone of the four neutral positions on the Ruddervator can be used to actuate a motor control. The latest form of Ruddervator, called the Super Ruddervator, has built in provisions for mechanically controlling a glow plug engine, and has the added feature of a battery current saver. It is fully described in the Sept. '50, M.A.N.

The Tri-Pacer

(Continued from page 20)

securely to the fuselage. A 1/8" x 1/2" balsa brace is cemented between the two upper ribs.

The top rear portion of the fuselage now can be sheeted down. While the latter is left to dry, the cowl shell can be started. Several pieces of scrap balsa are cemented to the fuselage nose, when dry shape to proper contour and make the necessary cut-outs for the installation of the engine.

Form the nose gear axle and strut, the yoke is cut and shaped from thin shim brass, soldered on top and on both sides of the axle as it leaves the wheels. Position the wheel before soldering. The shimmy damper is formed from 1/16" wire and soldered. In the oleo strut effect use two different diameters of plastic tubing. The scoop is cemented in place before the nose wheel is added. Apply two to three heavy coats of cement to the nose gear as this unit takes plenty of abuse.

Sand the fuselage and give it three coats of clear dope with a light sanding after each application. When dried add the cabin braces, forming them from 1/16" sq. balsa, sanded to a round cross section.

The leading edge is 3/8" x 5/8" balsa, or it can be built up from 3/16" sheet stock, as can the sheet tip. The trailing edge is 3/16" x 3/4" and all ribs except the root ribs are 1/16" sheet. The root ribs are 1/8" sheet. Pin the leading and trailing edges in place, cement the form ribs, notch where needed for the wing reinforcing strip. Cement the balsa tip and tip gussets in place. When dried remove from the bench and cement the strut reinforcing strip in place. Repeat for the other

(Continued on page 46)

STRUCT-O-SPEED, STRUCT-O-SPEED, STRUCT-O-SPEED
All they want is **STRUCT-O-SPEED**
- and that's what

COMET offers in the Newest JETS and WARPLANES

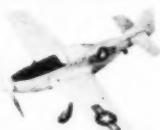
Sing out for "Struct-O-Speed!" That's what model builders everywhere are doing—because Struct-O-Speed offers the greatest ease of construction, the surest results, the finest finished models! Now—Comet presents a full line of Struct-O-Speed Models at 25c, 50c and \$1.00—including the great jets and fighters now writing history over Korea! Struct-O-Speed Kits are complete kits—with plastic parts and all-balsa construction that gives you a better model in less time. Comet's tremendous volume and manufacturing facilities make possible the greatest values in the industry! See and buy these and other Struct-O-Speed Models at your Comet dealer's—today! ALL COMET STRUCT-O-SPEED MODELS ARE E-Z-TO-BUILD



25c F14-SABRE



25c F13-THUNDERJET



25c F11-MUSTANG



25c F12-MONOCOUE



25c F9-GLOBE SWIFT



25c F6-FOKKER

Other F Models
at your dealer's.



COMET
MODEL HOBBYCRAFT INC.

501 W. 35th Street • CHICAGO 16, ILLINOIS



50c K5-SABRE



50c K6-THUNDERJET



50c K4-MUSTANG



50c K2-PIPER CUB



50c K1-AERONCA



50c K3-TAYLORCRAFT



\$1 M1-TAYLORCRAFT



\$1 M2-PIPER CUB



\$1 M4-BEECH BONANZA



\$1 M5-BELLANCA



\$1 M6-ERCOUE



\$1 M3-AERONCA

COMET CEMENT 10c

COMET DOPE 10c

"Family of Famous Folks"

NORVAL HALE
and prize-winning
PAA Load plane



1950 Nationals

Winner of:

1st in Class B Sr. Free Flight
3rd in Sr. R.O.W.
5th in Class C Sr. Free Flight
4th in PAA Payload Event

... Norval writes: "My planes are ALL finished with Aero Gloss. I have never found a model plane finish that surpasses it... for durability, elasticity and beauty."

FACTS ABOUT FINISHING

Always start with a CLEAN surface.
Plan color scheme to apply lightest color FIRST.

Flow brush strokes in ONE DIRECTION only.

Apply dope in WARM, DRY ROOM.
ALWAYS use Aero Gloss for the Finish that Mirrors Perfection.



SAVES YOU MONEY, TOO!

4 oz. "Brand A" Color Dope 40c
4 oz. "Brand B" Fuel Proof 43c

COSTS YOU 85c
4 oz. Aero Gloss Hot Fuel Proof Color Dope 60c

YOU SAVE! 25¢

If not available locally, send name of Dealer and 60c

HOT FUEL-PROOF PLASTIC Balsa

Easily workable, extra light, easily sanded material for fillets or molding complete units. Perfect for use wherever fuel may spray.

1½ oz. Tube 30c



C-77 HOT

FUEL PROOF CEMENT

Unaffected by any fuel... unequalled for cementing these danger spots around cockpit, firewall, engine mount. Handy 1½ oz. Tube... 25c



The only TRUE hot fuel proof dope

Choice of Stearman or Fokker Red, Cub Yellow or Orange, Silhouette Aluminum, Waco Maroon, Taylorcraft Cream, Cessna or Stinson Green, Cessna or Lambert Gray, Curtiss or Corsair Blue, Jet Clear, Balsa Filler coat.

wing panel. Sand smooth to the airfoil shape shown. Apply a coat of clear dope to all surfaces that the covering material will come in contact with. The 1/2" dihedral on the wing panels is built into the root rib. The panels are cemented to the fuselage. Heavy grade Silkspan was used to cover the wings. Three coats of dope are given the covered panels with a light sanding after each brushing.

The original model sported a sky blue doping throughout, with yellow trim. Three coats of colored dope were applied. For numerals we used both white and red Trim-film. You will note from the photos that a shadowing effect was used. The first numerals to be cut and fastened to the wing were white, followed by the red. Stagger the red for a super looking license number. Complete the trim by inking in outlines of the doors, ailerons, and elevators. The cabin windows are given the proper effect by using silver Trim-film. The main gear wheels can now be soldered in place. Three one-inch diameter Veco wheels were used. Rudder lettering is inked on Duro-seal, then fastened to the plane. The wing struts are built up using 1/16" x 1/8" and 1/16" x 3/16" strip stock; cement as shown and fasten in place. The wire guide is bent from 1/16" wire; fasten to the left wing strut. Thin celluloid is preshaped and then cemented to the cabin.

Wingtip lights are added and silver Trim-film landing light on the left panel's leading edge. A thin antenna is mounted on top of the model using tooth picks as antenna posts. Two coats of good fuel proof should be ample protection. The engine is fastened in place with ordinary wood screws.

The model was flown on 40' lines. We started off with 25' lines and after a few laps were convinced that longer lines were needed. The Pacer handles and flies well, and after several take-offs, good three-point landings will be common and lots of fun. The nose wheel after many a hard landing still serves us well.

Phantom lines show the Pacer with the conventional landing gear.

BILL OF MATERIAL

- A. Wire—Gear, Pushrods, Lead-ins, Line guide
- B. 1/16" x 3/16" balsa—Struts
- C. 3/16" x 3/4" balsa—Wing Trailing Edge
- D. 3/8" x 5/8" balsa—Wing Leading Edge
- E. 1/8" sheet balsa—Ribs (4), Wing Tips
- F. 1/16" sheet balsa—Ribs, Fuselage, Formers
- G. Silk-span—Covering
- H. Trim-film—License numerals and trim
- I. Miscellaneous—Tank, Horn, Plastic hose, Landing Gear assembly
- J. Plywood—Firewall, Tail Surfaces, 1" dia. wheels
- K. Engine—Cub .074 (or similar)
- L. Liquids—Colored dopes, Cement, Clear dope, Fuel proof

THE END

PACTRA CHEMICAL COMPANY

Makers of the Most Complete Line of Model Finishes

1213 NORTH HIGHLAND AVENUE • LOS ANGELES 38, CALIFORNIA



ALIGNS ITSELF AS YOU BUILD IT!

45 "SPAN-24" FUSELAGE

Stunt or pleasure flying—for beginners, experts, contestants! Never before a model so easy to build—Die-cut sides, top, bottom, plywood-formers, flaps, wing ribs, side-stiffeners. Shaped, rudder, stab, elevator, cockpit, turtle deck, landing gear! Detailed plans AND—instructions.

5.95



435 sq. in. wing area

For 19, 29 & 35 cu. in. eng.

21 SELF ALIGNING SLOTS

NEW! STARLET-150 WING AREA

ALIGNS ITSELF AS YOU BUILD! 24" wing span, 14 1/4" FUSELAGE! READY SOON! 1/2 SCALE FLYING CORSAIR & P-51.

Kits contain Carved, hollowed fuselage, cut-to-shape wings, stabs, rudder plans

DEPT. MA-353 ea. \$2.95

Consolidated

3087 THIRD AVENUE, NEW YORK 56, N. Y.

Hell Razer

NEW! 1 1/2 A"

World's finest prize-winning model! New 1 1/2 A HELL RAZOR-87 MPH, 9" span.

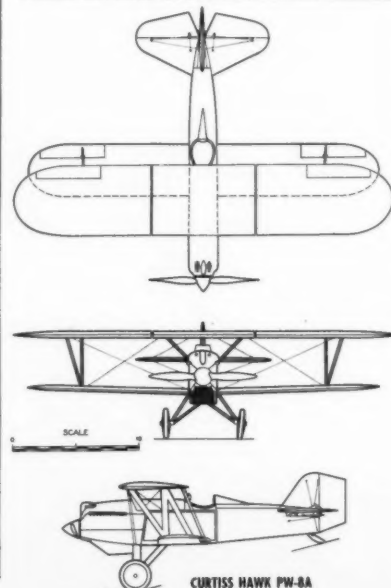
\$2

159.23 HELL RAZOR

Class "A" Each 5.95
" " " " With 6.50
" " " " Magnesium 6.50
" " " " Bottom 6.95



If no dealer near you, order direct, add 50c for postpaid. No. C.O.D.



CURTISS HAWK PW-8A

AMA News

(Continued from page 30)

the AA models will be flown on 35-foot lines and be judged the same as their larger counterpart. Rumor also has it that the larger class, limited to a maximum motor displacement of .65 cu. ins., will be flown on 52-1/2" lines this year. This change, if brought into effect, is an effort to help the flyers bring their models in on the deck, not in the "drink."

The Navy Carrier Event is designed to emphasize the simulation of a Navy carrier plane, meaning that characteristics such as quick take-off, high speed, stability at slow speeds, and a fuselage strong enough to take the shock of arrested landings are desirable. The only restrictions imposed on the models are that they shall not exceed 44" wingspan, 58" length, or 17" in height (1/12th size of an actual carrier elevator). Models must have a conventional landing gear which may be either fixed or retractable.

Judging of the Navy Carrier Event consists of launching, high speed flight, slow speed flight, landing, and scale.

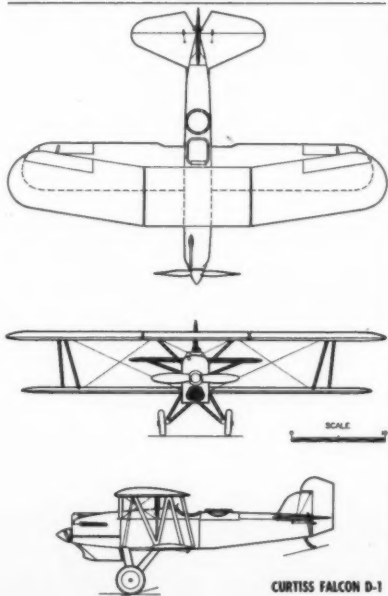
One hundred points are given for a successful take-off if the model does not come in contact with the ground immediately after leaving the elevated carrier deck.

Timing for the high speed portion of the flight starts the instant the model begins to roll at take-off and continues until the model has flown for a half-mile or the designated course. One point shall be given for each mph averaged during the high speed flight.

When the flyer has decelerated his plane to his satisfaction, the judges are signalled to start timing for slow speed. One point is given for each mph of difference between the slow and high speed averages.

For the landing, an arresting hook or similar device shall be provided on the model for engagement in the arresting gear. One hundred points are awarded for a successful arrested landing where the model comes to rest on the carrier deck still engaged in the arresting gear. Fifty points are awarded for a successful landing on the deck without being engaged in the arresting gear. A successful landing is considered one in which the plane is in any attitude on the deck except over on its back. One hundred bonus points may be awarded each model capable of flight if it is a scale replica of any U. S. military aircraft.

ELECTION GOING FULL SWING. As this was written, the election of 1952 AMA officers and contest board members was just getting into full swing. A check with Mrs. B. J. Fritchey, chief ballot recorder and secretary to Russ Nichols, indicates that over 600 ballots have been received to date, an indication



CURTISS FALCON D-1



The RING MASTER

only \$2.95

Designed by Matt Kania . . .

Introduced with pride by Sterling

"THE BEST STUNT MODEL I'VE EVER DESIGNED"

says Matt Kania, world famous model designer!

Here it is . . . the finest stunt control line model ever created . . . designed and flight proven by Matt Kania . . . and backed by Sterling's reputation for the finest materials and expert craftsmanship. Matt Kania says: "Fellows, The Ring Master will do everything in the book—and will probably outfly anything on the field!"

Prove it yourself! See your dealer now—and in a few hours—FLY YOUR RING MASTER!



Check these Features!

- Shaped and Notched Leading and Trailing Edges
- Die Cut Ribs and Tail Surfaces
- Die Cut Plywood Parts
- Die Cut and Shaped Fuselage
- Decal Insignia
- Gas Model Silkspar
- Formed Wire Landing Gear
- Hardwood Motor Mounts
- Quality Balsa Wood
- Easy-to-Read Step-by-Step Plans and Instructions

SEE THESE OTHER STERLING MODELS AT YOUR DEALERS

Monocoupe	\$4.95
Howard Pete	\$5.95
Mr. Mulligan	\$4.95
The Waco	\$5.95
Polish Fighter	\$5.95
SE 5	\$5.95
Ryan S-T	\$5.95
The Maverick	\$1.00
SCALE POWER BOATS	
Richardson	\$5.95
Higgins	\$4.95
Buccaneer	\$7.95
TUBING	
Sterling and Steri-X	

Sterling models

1530-34 N. Hancock St.

Philadelphia 22, Pa.



Our 409th Advertisement REAL DIESEL ENGINE!

\$2.95

You can't beat this price!

- Ideal for planes, boats, midjet cars
- Actually runs at 7500 RPM, produces 1 7/8 HP
- Weight a full 3-1/2 inches; weight 8 ounces

MAYBE WE'RE CRAZY, giving away a precision diesel engine, with cylinder and piston, carburetor, crankshaft, connecting rod, etc., for ONLY \$2.95. But we're selling thousands of DEEZILS all over the world, and that keeps our production costs down. DEEZIL is streamlined, compact and easy to install. Runs for years! Fast delivery if you ORDER DEEZIL today!

Our 439th Advertisement

SEND \$2.95 plus 25c postage
GOTHAM HOBBY CORP.

107 E. 126th St., New York 35, N. Y.

BALSA WOOD

Top Grade Precision Cut Model Aircraft Stock. Eighty stock sizes.

Discount to dealers and kit manufacturers.

Write for free Price List

SIG MANUFACTURING CO.
Montezuma, Iowa

NOW • The Famous HOT ROD That Made Headlines

BROKE THRILLING RECORDS AT MUROC!

★ Now its scale model, in simplified kit form, produced by ACE, is the "toast" of model builders and hot rod fans everywhere. Authentic, realistic, this "Hottest of Hot Rods." Can even be made with jet propulsion if desired. EASY TO BUILD by the beginner — interesting details for the expert. Parts mostly ready-shaped — complete plans and instructions. Get yours today!

ACE "HOT ROD" KIT No. 20R



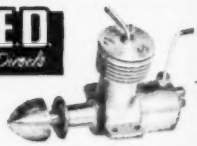
\$1
COMPLETE
KIT

AT ALL MODEL AND
HOBBY SHOPS

TRY

SEE .065 cu.
in. 3" long,
2 1/4" hi.

**NO BATTERIES
NO WIRES
NO FUSS
NO PLUGS**



Adjustable compression

ALL PERFECT—ALL PROVED

Compact wt. 2 1/4 oz. Disc rotary
valve thru center of gas tank. Bore
0.437", stroke 0.400. Static thrust
12 oz.

\$11.95

COMPETITION

SPEC.
12 cu.
in. 4"
long,
3" hi.



Holds 90 m.p.h. speed
record.
2302 sta-
tic thrust.
5 1/2 oz.
wt.

\$14.95

RACER



Develops 1 1/4 b.h.p. at
1200 r.p.m. Disc ro-
tary.
Double
ball-bearing
shaft.

\$16.95

MARK "4"

.21 cu. in. 4 1/4" long, 3" hi.
Develops 10,000
r.p.m. Tops for
stunt, free flight,
and radio control.



\$19.95

RADIO CONTROL OUTFIT \$39.95

Transmitter, receiver and escapement
with plugs, jacks, sockets, solder, in-
structions. Plus \$1 for packing and
postage.

**DEALERS: POLK'S are DIESEL &
QUARTERS of the U. S. Order NOW!**
Regular trade discounts.

POLK'S HOBBIES

314 5TH AVE.
DEPT. MA-382, N. Y. C. 1

that this will probably be a record breaking year for the number of ballots received! The complete results will be given in this column next month.

With Joe Major's election ballot was received this message: "I find that in marking my election ballot I am forced to make my choices based on the mere appearance of a name since I have no other way to judge those whom I am asked to vote for. Perhaps others among the membership are faced with the same problem." Undoubtedly, Joe, there are others faced with the same problem.

Joe goes on to say that he is of the opinion that biographical sketches of the nominees for the principal offices should be made available to the membership, somehow, before the election so that there would be something for those voting to base their opinions on.

That sounds like a mighty good idea, Joe, if the nominees draw up their own biographical sketches. It is obvious though, that AMA Headquarters does not have an equal amount of material on hand for each candidate. Let's have some comments on this subject! Do you want to have short autobiographies on the nominees?

If you've seen or heard of a rule questionnaire, don't become alarmed. It is true that Ray Matthews, AMA Contest Board Chairman, has circulated a number of questionnaires with regard to the rules but it is a trial one and will have absolutely no bearing on the 1953 rules other than to determine what questions will be asked when the final ballot is put to a vote of the AMA license holders. Naturally, those questions in the trial questionnaire receiving a fairly good reception will be included in the final ballot, scheduled to be circulated sometime near the close of 1952.

Have you applied for your 1952 AMA license yet? If not, look around for that application you received from AMA a while back, fill it out, and mail it without waiting.

We Test the All-American

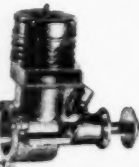
(Continued from page 17)

outboard wing and no engine offset. Off again. The shift of balance smoothed out the loops beautifully and she checked off the AMA pattern with ease. Asymmetrical Stability really works!

Now for a few brief comments that may be helpful on construction. Familiarize yourself with the plans. They are brief but complete. Stack the ribs and cut the leading edge notches at one time. Cut holes in ribs for the lead out wires before assembly. Sand rear of the trailing edge sheets to a slight bevel where they will be cemented. It was found advisable to lay out the two sections of the spars, leading and trailing edge sheets on a flat surface and to cement them together, making them run the full length of the wing before starting assembly. For accurate as-

FOX 59

HP — 1+, WT — 10 1/2 oz.
**WORLD'S FINEST FOR
STUNT AND
FREE FLIGHT**



FOX 35

HP — 1/2+, WT — 6 oz.
**FIRST — 1950 AND
1951 NATIONALS**

FOX

- EASIER STARTING
- SMOOTHER, STEADIER RUNNING
- MORE POWER — LESS WEIGHT

ARNOLD & FOX ENGINEERING CO.
7401 VARNA AVE., NORTH HOLLYWOOD, CALIF.

25% OFF ALL NEW MOTORS!

Send us your old motor and claim this terrific trade-in allowance!

One trade-in (any make, any condition) accepted on each new motor ordered.

Atwood Wasp U.C. .049	\$ 6.50	Mills .045 U.C. (Diesel)	9.95
Atwood Wasp F.F. .049	6.75	Mills .045 F.F. (Diesel)	10.95
Baby Spitfire .045	5.45	Ohlsson .29	11.95
Bluestreak .65	23.90	Ohlsson .33	13.95
Dart .03 (Diesel)	12.95	Ohlsson .60	13.95
Dooling .29	14.95	O.K. Cub .039	4.95
Elf Single .099	12.50	O.K. Cub .049	5.25
Elf Twin .198	21.50	O.K. Cub .074	5.95
Elf Four .398	45.50	O.K. Cub .099	6.95
Elf Six .894	85.00	O.K. Santam .199	9.95
Forster G.29	14.25	O.K. Mothawk .29	9.95
Forster G.31	14.25	O.K. Mothawk .29	10.95
Fox .29	14.95	O.K. Twin .120	25.00
Fox Racing .29	16.50	Orwick .29	21.50
Fox .35	14.95	Orwick .64	27.50
Fox .59	29.95	Pal Twin .55	49.00
Hornet .199A	23.90	Royal Spitfire .085	7.95
K&B Infant .020	4.95	Spitzzy .045	2.45
K&B Torp. Jnr. .035	4.95	Super Cyclone .604	12.95
K&B Torpedo .049	5.95	Wasp Twin .90	29.50

RADIO CONTROL

Vernon MacNabb Citizenship Transmitter, Receiver and Self-Neutralizing Escapement

\$79.65

E. D. Transmitter, Receiver and Self-Neutralizing Escapement

\$39.95

Roland Scott Comet Transmitter, Receiver and Self-Neutralizing Escapement

\$29.95

ALL TUBES INCLUDED

FREE! Brand new Fox 35 (Regular \$14.95 value) plus matched propeller included absolutely free with every radio control purchase.

These offers available only from:

**ALL AMERICAN MODEL MOTOR EXCHANGE
DEPT. M BOX 885, SANTA MONICA, CALIF.**

**if YOU PAY
MORE THAN 75¢
PER PINT FOR
RACING FUEL—
You Certainly Deserve**

**francisco
fuels**
PROVEN QUALITY

In all recent tests, Francisco Fuels have received the highest all-around rating for purity and performance—and the least amount of detriments.

**POWERMIST • SPITFIRE
BLUE BLAZER
* FUEL OF THE CHAMPIONS**

FROM THE WORLD'S FIRST, LARGEST, BEST EQUIPPED
RACING FUEL LABORATORIES
FRANCISCO LABORATORIES

FINE MODELS, TESTED AND PROVEN!

LEARN WITH THE "ALL-AMERICAN" TEAM



All American Jr BASIC TRAINER \$1.75 *All American Jr* STUNT TRAINER \$2.50 *"All American"* STUNT MODEL \$4.95 *All American Sr* CONTEST STUNT \$5.95

Every Member of the Team features "Asymmetrical Stability", the Sensational means of obtaining a Cleaner, Lighter Model of Superior performance. All kits are completely pre-fabbed from the finest HAND PICKED materials, plans are FULL SIZE and a formed Dural Gear is included.

DMECO MODELS FOR FUN AND PLEASURE

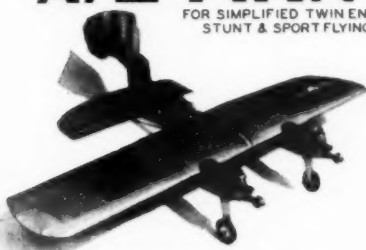


"SPEEDWAGONS"
Fast Rugged and Winners!

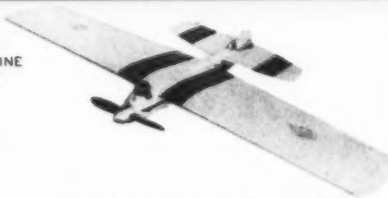
SPEEDWAGON '20'.....\$3.95
SPEEDWAGON '30'.....\$4.95
SPEEDWAGON '50'.....\$5.95

A/2 TWIN

FOR SIMPLIFIED TWIN ENGINE
STUNT & SPORT FLYING!



A REALLY FINE DMECO KIT.....\$2.95



"STUNT WAGONS"
Stunt Flying at its Best!

STUNT WAGON C-D.....\$7.95
STUNT WAGON '30'.....\$5.95

DEBOLT MODEL ENGINEERING CO.
WILLIAMSVILLE, N. Y.



TURN BACK THE HANDS OF TIME
WITH THESE COLLECTOR'S ITEMS!
OLD-TIME AUTOS
in MINIATURE!
\$1.95 to \$3.95
SUCH FUN TO BUILD!

The Wicker Basket was a familiar auto accessory in 1903! This detail and scores of others will be found in our 1/4" scale models! So realistic, they're on display in famous museums! Start your collection — enjoy these nostalgic antique autos! They measure 8" to 10 1/2". They come pre-fabricated with all ready-shaped die-cut parts, plastic cost wheels, lamps, radiator, horn, etc. History of each car and step-by-step



Model "A" Ford—\$2.50



1909 Stanley Steamer—\$2.95



1904 Olds—\$1.95



1911 Maxwell—\$2.50



1914 Six—\$2.95

instructions that a 10-year old can follow, with each kit. At toy, hobby and dept. stores; guaranteed money back if not satisfied. Grand hobby for all from 9 to 90; wonderful for shut-ins and convalescents! Order a complete set! Other models not shown are:

- ☐ 1902 Air-Cooled Franklin.....\$2.50
- ☐ 1906 Columbia Electric.....\$2.50
- ☐ 1910 International Harvester.....\$2.95
- ☐ 1900 Packard.....\$2.50
- ☐ 1903 Cadillac.....\$2.50
- ☐ 1911 Buick "Bug".....\$2.50
- ☐ 1910 Model "T" Ford.....\$2.50
- ☐ 1909 Model "T" Ford.....\$2.95
- ☐ 1903 Rambler.....\$2.50
- ☐ 1912 Mercer Raceabout.....\$3.95
- ☐ 1908 "Old 18" Locomobile.....\$3.95

WRITE TO US. ADD 25c FOR POSTAGE AND HANDLING.
NO C. O. D.'s PLEASE.

hudson miniatures OLD TIMERS
"Originators of Antique Autos in Miniature"
SCRANTON HOBBY CENTER, Dept. 6, Scranton 10, Pa.

sembly of the wing, first mark the rib positions on the spars, leading and trailing edges, line them up on the work table side-by-side and with a straight edge, marking them all at one time. This helps greatly in keeping the wing aligned correctly.

Leading edge sheeting on the wing can be put on easily by applying cement to the spars, leading edge and edges of the ribs to be covered. Lay the sheeting in position temporarily while cement is wet; it will mark the places on the sheeting that will make contact. Apply cement to these sections marked, paint the outside of the entire sheet with water applied with a paint brush. The sheet will curve toward the cemented side. Apply additional cement and assemble, using pins to hold the sheeting in position. If the ship is to be flown counter-clockwise, turn the wing frame over before putting on the center section sheeting and control mount and the bellcrank will be on the bottom. If desired, when putting on the center section sheeting, instead of making a sharp corner where the sheeting and the leading edge sheeting meet, it may be curved toward the wingtip, adding additional strength at an important point. The wingtips are a little tricky but by cutting the leading and trailing edge sheeting away for about half the thickness of the outside rib, it leaves a ledge on which the tip sheeting can rest. By handling each section separately, fitting each well before cementing, then wetting the outside thoroughly and using plenty of pins, a neat and strong job can be accomplished.

For strength, the firewall and bulkhead at the rear of the motor mounts can be made of plywood or covered with gauze. Before starting assembly of the body, put the sides one on top of each other and cut the slot for the stabilizer. An easy method of assembling the body is first to cement the motor mounts and first two bulkheads together and allow to dry in a clamp or vise. Cement this motor mount assembly in place between the sides, clamp this all, line up the rear of the fuselage and hold together with clip clothespins. After completing the assembly of the control

WARPLANES!

Complete Analysis With
3-View Drawing ONLY 25c EACH

- No. 1—Lightning P-32 No. 4—Corsair F4U
- No. 2—Thunderbolt P-47 No. 5—Mustang P-51
- No. 3—Warhawk P-40 No. 6—Flying Fortress B-17
- No. 7—Superfortress B-29

Each booklet presents the complete "story" of a famous World War II plane including:

- Detailed analysis of structure, mechanisms, systems, equipment, armament and performance.
- Large, carefully scaled 3-view drawing with valuable cross-sections.
- Chronological history of successive models.
- Complete photographic history of the many modifications in design.

Single copies, 25c each; any 5 for \$1.00; entire group for only \$1.25.

AIR AGE INC.

551 Fifth Ave., New York 17, N. Y.

Herewith \$.....for which please send me postpaid the following Air Age Technical Library analysis (at 25c each):
(circle the ones you want)

1 2 3 4 5 6 7
OR ☐ Any 5 for \$1.00 ☐ Entire group for \$1.25

Name.....
Address.....
City..... State.....

TOP FLITE
MODELS INC.

Fellas

Can a Novice Build FLYING Models?

Yes
Everytime...if

THEY'RE FAMOUS
TOP FLITE
JIGTIME Construction
(Pat. Pending)



Flash photo of 10 yr. old Dave Axelrod flying his TOP FLITE JIGTIME "Rascal-18."

They're GUARANTEED to Fly!
OR YOUR MONEY BACK!

It's amazing what JIGTIME Construction does for fellas who have never built a model and flown it! Dozens of boys, many 6th graders, made repeated tests of Top Flite's JIGTIME Construction. Most of these boys had never before assembled a flying model. What happened? Test after test proved that each boy completed his model—and each model flew! If you are in 6th grade or higher—if you want the double thrill of completing a model and flying it—get busy today. Go to your model dealer, pick out one of these TOP FLITE JIGTIME models and be sure to follow the simple step-by-step plans. We guarantee you'll have fun building your model and that the completed model will fly or your money back!

CHECK YOUR FAVORITE HOBBY SHOP IN MARCH
FOR 3 EXCITING, NEW JIGTIME MODELS!



TOPFLITE MODELS INC., 2635-455. Wabash Ave., Chicago 16, Ill.

Memo for Model-Hobby Dealers

Another National Service

National offers you a brand new and helpful catalog of engine parts. Use it for your own convenience—to please your customers—to make money in this important part of the model business. Keep it handy along with National's Check List, Railroad Parts catalog, weekly Silent Salesman, etc.

Write for New Catalog of ENGINE PARTS

Write today—on your letterhead, please. Big 16 page illustrated book. Gives names, numbers and prices of every part of 50 leading model gas engines and fuel tank and propeller recommendations.

national
MODEL DISTRIBUTORS
2516 NORTH GREENVIEW AVENUE CHICAGO 14, ILLINOIS

Exhibit this
authentic model of
the "SABRE"

NEW!

U.S. Air Force
Swept Wing
Combat Fighter
Scale: 1/6" to 1".
Wingspan 4 1/4".
Fuselage 8 1/2". All parts
ready-shaped for quick assembly.
Complete with full-color decals,
plastic canopy,
and display
stand 69¢

At your Hobby Dealer or
send for free catalog

STROMBECK-BECKER MFG. CO.
Moline, Illinois, Dept. MN3

StromBecker

pivot, we tried the new nylon bellcrank by Sullivan Products which seems to be working very well. On a thick wing ship, it is often advisable to bend up the ends of the bellcrank to align with the lead out holes in the wing and we found, by heating the nylon over a hot soldering iron and holding it till it cooled, it was as easy to adopt this bellcrank as any made of metal. Regardless of the bellcrank used, be sure and check the movement for freedom before putting on the center sheeting so that, in the extreme forward and back movement, the pushrod does not go past the edge of the control mount block and have a chance to jam. A small scrap of balsa next to the control mount will take care of it.

It was found that a hole 17/32" from the center of the bellcrank and a hole in the elevator horn 1/2" from the center of the elevator made a good combination for adequate control movement. Don't assemble the tail to the body until nearly last. In that way it is possible to put a Z bend in the pushrod at the elevator horn. Slip the pushrod into the horn and, with the bellcrank in neutral, shift the whole tail back or forward to compensate for any error in bending of the pushrod. Also, if loops in the leadout wires are left till the very last, there is a last chance to compensate for error. One final thing, a scrap of balsa in the V formed by the body at the rear helped to anchor the rudder in position while putting on the cabin sheeting.

In a nut shell, it's fast, does tight loops, has quick response with a small amount of tail movement. If you want to play safe, put a slight bit of offset in the engine and just a small amount of weight on the outboard wingtip for counter-clockwise flying—though it isn't essential. The All American can be classed as a good stunt job and stacks up with the best of the 29's.

Scrap Box

(Continued from page 5)
the Mac 29 engine.

In team racing events, the modeler must have a good engine shut-off system. James P. Kelly of Robbinsdale, Minnesota was asking a few questions about fuel shut-off systems, so thought we'd check some of the types used by the "wheels." Paul White had a very compact and simple arrangement for his ship. He solders a K & B shut-off valve to the metering jet side of his Mac 29 venturi after making and fitting a dural flat horn between the venturi and the shut-off. The horn has a close fit hole drilled at its base, allowing the tube to the shut-off to pass through it and also free swinging action. The horn is filed to shape which, when pushed forward by the bell crank rod, which is fit into another hole at the top of the horn, trips the shut-off and cuts the engine. Another hole is drilled through the top of the shut-off rod itself through which a piece of 1/32 wire is bent and soldered. This piece of wire extends through the cowl and when it's pulled up,

Super Detail World War I

1/2 INCH SCALE FLYING MODELS

DESIGNED FOR CAMPUS CO2 OR RUBBER POWER

SOPWITH CAMEL
SPAN 14" \$1.00



OTHERS AVAILABLE IN THIS SERIES

SESA SPAN 13 5/16" \$1.00
FOKKER DRI SPAN 11 3/4" \$1.00

ASK YOUR
DEALER FIRST

If Ordered Direct Please Add 10c Postage

CARTER
CRAFT MODELS
18 MONTICELLO ARCADE NORFOLK 16, VIRGINIA



Meet "Herky," the "OK" Cub
he's a BEAR for Power!

**for power...price...performance
you can't beat "OK"!**

OK CUB .074

Packs a wallop! Most powerful engine in its class! Patented port design — an "OK" exclusive — provides greater turbulence, effective scavenging, higher power/weight ratio.

Displ. — .074

Bore — .479

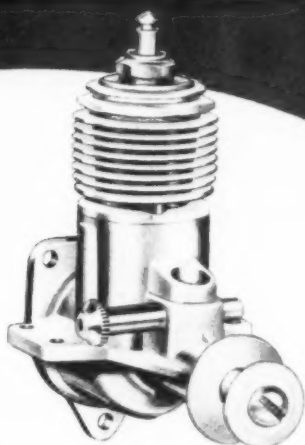
Stroke — .415

RPM — 3,000 to 15,000

Weight — 1½ oz.

Only

\$5.95



OK

GLOW FUEL

Unlike some fuels, "OK" Glow Fuel operates over a wide range of climatic conditions.

85c



OK CUB .049

power kit

A \$6.15 value — assemble it yourself and save \$1.20! How's that for value!

ONLY \$4.95



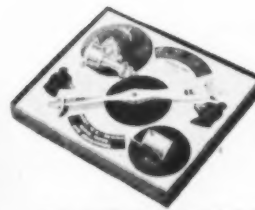
CUB .039
\$4.95



CUB .049
\$5.25



CUB .099
\$6.95



COMBINATION PACKAGE

(Includes assembled engine, prop and tank.)

CUB .049	\$5.75
CUB .074	\$6.75
CUB .099	\$7.75



"HERKY" says . . . "See Your Dealer—Say 'OK'." Or write us direct:

HERKIMER TOOL & MODEL WORKS

83 Harter Street

Herkimer, N. Y.

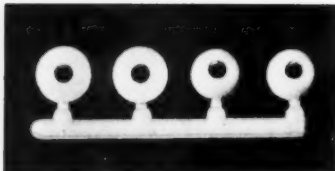
Manufacturers of Famous "OK" CO₂ • "OK" Bantam • "OK" Hothead • "OK" Super 60 • "OK" Twin

TWO NEW

NYLON Accessories

WHEEL COLLARS

4 for **15c**



Once you try these nylon wheel collars you'll never settle for anything less! Just imagine an instant locking wheel collar that you install with a simple push of your thumb! Yes, amazing nylon wheel collars are pushed in place in a second, yet gives a safe, positive locking action. And think of it . . . only 4 for 15c! Get some at your dealers today.

FLY SAFELY . . . USE PYLON BRAND CLIPS AND SWIVELS!

DACRON LINES FOR 1/2A

52' **25c**

Here's the newest of the synthetic fibres . . . Dacron . . . the amazing new development of Dupont research Dacron is a sturdy synthetic that contains all the advantages of nylon . . . PLUS . . . it cannot stretch! Yes, remarkable Dacron has the stretch removed! Imagine what that means to smooth, easy-to-handle control line flying. Try it . . . you'll go for it.



AT YOUR FAVORITE DEALER

Sullivan Products

PHILADELPHIA 23, PA.

SPECIAL 10 DAY TRIAL AEROMODELLER ANNUALS



RADIO CONTROL FOR MODELS

128 pages 8 1/2" x 5 1/2" over 175 photos, circuits. Every Aircraft, Boat builder should have this book. Shows simple and "fellowing" controls. Escapements with 2 up to 8 movements. Delayed actions, etc. Boat layout with 4 speed controls, rudder, reverse, etc. Charts give symbols for circuits, etc. Scale plans of Good Brothers Rudder Bug.

Cloth Bound . . . \$2.98



CONTROL LINE

128 pages 8 1/2" x 5 1/2" over 100 plans, photos, sketches. A complete study of control flying, starting with beginner's models to expert scale, bomb dropping, retracting gears, etc. All types power, jet, diesel, glow, gas. Models from U.S. and Europe. Beautiful "Ghost" models of clear plastic, etc. Hundreds of ideas to help you build better control models.

Cloth Bound . . . \$2.98



AEROMODELLER ANNUALS

World famous Annuals contain 640 pages, 212 plans. Each gives records of important World contests. Over 500 photos, sketches, 1948, 1949, 1950, 1951 editions available ("52 to be published in '53, etc.) Latest Radio Work, Wakefields, Giant gliders, scale, jet, etc. Drop us a card, 10 day money back guarantee. C.O.D. accepted. Each cloth bound.

Set of 4 . . . \$11.92



MODEL BOATS

128 pages 8 1/2" x 5 1/2". Over 100 photos and Plans Racing Yachts, Dinghys, Bermuda Sloop, Scale Galleon, Racing Hydroplanes, Outboard motor types, Jet power, Clockwork, Gas, Diesel, Steam, Rubber power, all shown. All drawings show how to build, finish, and operate. Plans for steam engines, prop design, etc. All are in great detail. Simple models to super detailed work for Radio Control of boats.

Cloth Bound . . . \$2.98



CAR MANUAL

128 pages, 8 1/2" x 5 1/2". Over 150 plans, photos, sketches. Shows simple balsa models in complete formed aluminum. Rubber, jets, electric, glow, gas power. Gives plans of M.G. racers, Mercedes Benz, E.R.A. Maserati, Auto Union, etc. How to make centrifugal clutch, wire wheels, gearing, finishes, etc. CAR MANUAL and MOTOR RACING IN MINIATURE are complete sets.

Complete set . . . \$5.98

FULL SIZE PLANS GOOD BROTHERS RADIO CONTROLLED RUDDER BUG \$2.75

OTHER FAMOUS BOOKS

Design of Model Aircraft 2.98
Petrol Engines . . . 1.50
Solid Models 1.98
Model Gliders . . . 1.98
Motor Racing in Miniature \$2.98
Aircrafts75
Rubber Motors . . . 1.25
Airfoil Sections . .75
Simple Aerodynamics 1.25
Wakefield Design .75
Aerodynamics Analyzed75
Flying Boats75
Plan Fare 2.98
Amateurs Lathe 2.98
Westland Aircraft 2.98

INDOOR FLYING MODELS



INDOOR MODELS

80 pages 11 x 8 1/2". By Ron Warring. Shows all types indoor models, W.T.P. tethered, and Microfilm free flight. Dozens of drawings shown. Hundreds of indoor ideas, from world experts. Price complete \$1.98

THE HISTORY OF MODEL AIRCRAFT



HISTORY OF MODELS

80 pages 11 x 8 1/2". Shows models built as far back as 1874, up to more recent models. Gas engines of 1911. Complete Wakefield history from beginning. A collector's piece. Price complete \$1.98



SAILPLANES

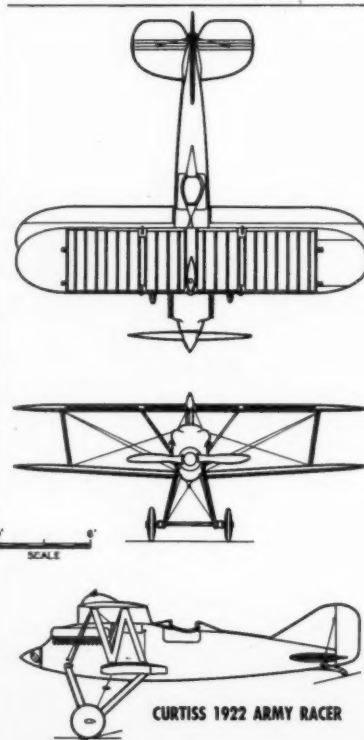
80 pages 11 x 8 1/2". Shows simple gliders to advanced 10 and 12 ft. span Sailplanes for Radio Work. Hundreds of photos, dozens of drawings, etc. Designed by world experts on the subject. Price complete \$1.98

FULL SIZE PLANS

1/2 A Free Flight \$1.25 each
Avro 504-K 36" span
D N Chipmunk 51"
Nieuport 41" span
Spad 38 1/2" span
Sopwith Camel 40"
Boeing X L 15-43"
Sopwith Pup 40 1/2"
Tiger Moth 44"
Bristol Bulldog 37"
40 page plans catalogue showing over 250 different types—10c.

AEROMODELLER MAGAZINES

Europe's leading model mag. Latest Radio, Control and Wakefield articles monthly. Year subscription . . . \$4.50



CURTISS 1922 ARMY RACER

sets the valve in open position and allows the fuel to be drawn into the engine. Paul's method is very simple to install and has given excellent results.

Les McBrayer uses another equally simple shut-off system in his famous *Highlander*. A regular square one ounce fuel tank with the two conventional lines, one filler, the other a breather, plus a gas line to the venturi are used. Another hole is drilled in line with an extension from his bell-crank push rod and a K & B shut-off valve is soldered into place in the top of the tank. The valve is worked via the extension (1/16 wire) from the arm of the push rod to the spring clip on the shut-off. The tank is filled in the regular manner with the shut-off in the off position. When the tank is full, the neoprene tubing to the vent line is also then hooked to the fill line. The shut-off valve is then opened by the reset wire, allowing air to be taken into the tank as it is needed, and the engine is started. When the ship has been in the air for the required number of laps, full control is given and the extended wire from the bell crank moves forward to trip the shut-off into the closed position. This naturally stops all air from going into the tank and the engine stops after approximately one lap has been flown. Les' set-up is perhaps the simplest to install and seems to be foolproof. There is nothing more troublesome in qualifying heats and trophy dashes than to have a shut-off fail at the wrong time. In the event this happens, the pilot must fly the tank out while all other contestants wait. Keith Storey has another type of system for shutting his engine off which we'll show you in the next issue if space permits. Keith simply bleeds air into his metering jet line which automatically kills the engine. It is very novel and completely eliminates any manufactured shut-off device. McBrayer kids Keith about it and calls it a "plumber's nightmare." We can tell you that it definitely gets the job done.

J. C. Russell pulled a "Conrad Conrod" by staying up until midnight finishing a novel T.R. ship to compete in the last race of the year. J.C.'s ship sported a gull wing and butterfly tail and is very pleasing to the eyes. The gear is short and wide and blends in nicely with the ship. The inverted Mac 29 and 9-8 Power Prop gives it plenty of suds.

The beauty event was taken by Lawrence Williams' all-metal Minnow scale racer. The only wood we could see on the whole job (Continued on page 54)

GULL MODEL AIRPLANE CO. 10 EAST OVERLEA AVE., DEPT. M-1 BALTIMORE 6, MARYLAND

IT'S *Super*—THE BOEING STRATOCRUISER

"QUEEN OF THE AIR LANES"



BOEING STRATOCRUISER

The double-deck Boeing Stratocruiser, "queen of the air lanes" links many parts of the world. The over-72-ton Stratocruiser was designed to fly further, higher, faster and with more passenger comfort than any other production airliner in the world. It is the most luxurious airliner ever put into service.

\$249

Collecting these Allyn model planes is fun — and you'll be proud of them! Start your collection today of these beautiful models, each in the exact scale and color of the original plane. See your nearest dealer for complete selection.

"THE CHOICE OF THOSE WHO WANT THE BEST"



BOEING STRATOFREIGHTER

The Boeing C-97 Stratofreighter, holder of the transcontinental speed record for transports, carries troops and cargo, and serves as a tanker for refueling in the air, or as a hospital plane.

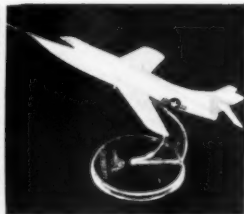
\$249



BOEING B-47 STRATOJET

The swept wing Boeing B-47, the world's fastest jet bomber, has proved itself to be outstanding in performance.

\$249



DOUGLAS NAVY SKYROCKET

The "Skyrocket," a revolutionary jet-rocket flight machine, holder of the world's speed and altitude records.

\$179

ALLYN'S EXACT SCALE MODEL KIT



DOUGLAS C-124 GLOBEMASTER

Heavy-duty, all purpose transport. Perfect reproduction of this aerial giant of the USAF.

\$249

DOUGLAS NAVY SKYSTREAK

This is the radically advanced airplane that captured two world's speed records in 5 days.

\$179



DOUGLAS NAVY SKYRAIDER

The Navy's carrier-based attack bomber. The AD Skyraider is believed to be the most efficient and versatile airplane of its type.

\$249

DOUGLAS NAVY SKYKNIGHT

A fast, long-range fighter, adaptable as an attack fighter, long-range patrol or reconnaissance plane, or long-range fighter escort.

\$249



If your dealer cannot supply you, order direct from the factory. Send Check or Money Order (no C.O.D.'s) plus 25c for packing and postage. Please include the name of your nearest dealer.

ALLYN SALES CO., INC.
6425 MCKINLEY AVE. • LOS ANGELES 1, CALIF.

DIRECTORY

For Hobby Dealers

CALIFORNIA—LOS ANGELES

Nationally advertised model planes, boats, trains, kits and supplies. Weekdays and Mon.-Wed.-Fri. Eves.

PICO MODEL CO.

2540 W. Pico Blvd. DUNKIRK 7-5894

CALIFORNIA—PASADENA

TRAINS—PLANES—BOATS
Complete Line
Kits—Tools—Supplies
Pasadena's Hobby Center

ACE MODEL SHOP

1655 E. Colorado St. SY 3-6061

CALIFORNIA—SAN PEDRO

Good Service! COMPLETE STOCK
Planes—Boats—Cars—Artist's Materials
Scale Models—HO-Lionel Trains.
(9 to 6 p.m.)

BRADFORD'S HOBBY &
PAINT HEADQUARTERS

408 W. 6th St. TE 2-2804

CANADA—TORONTO, ONT.

Model Aeroplanes, Motors, Trains & Boats.
Hobby and Craft Supplies

BURDEN'S HOBBY LOBBY

114 Dundas Street West Plaza 3244

FLORIDA—TAMPA

COMPLETE MODERN STOCK
Planes, Engines, Ships, Trains,
Race Cars, Tools & Supplies
EVERYTHING NEEDED.

EDWARDS' HOBBIES

108 East Cass Street 26-2092

ILLINOIS—CHICAGO

Model Airplanes—Tools—Engines
Model Railroads—Ships
Parts Of All Kinds
Visit Our New Big Store

ALL-NATION HOBBY SHOP

182 No. LaSalle St. DE 2-0850

ILLINOIS—CHICAGO

Model Airplane Engines, Kits & Supplies.
Model Railroads—Workshop Tools—
Handicrafts
Over 2,000 hobby items!

BURGESS HANDICRAFT STORES

182 North Wabash Avenue
Randolph 6-3647

MASSACHUSETTS—CAMBRIDGE (38)

Model planes, motors, railroads, ships
and accessories.
9 A.M. to 6 P.M. daily & Thurs., Sat. evenings.

CROSBY'S HOBBY CENTRE

1704A Massachusetts Ave. KI 7-4389

MISSOURI—KANSAS CITY

Model Airplane, Boat, Race Car,
Railroad & Hobby Supplies
Open 10 to 6, Mon. Thurs. & Sat. till 9:00
Sun. 10 to 3

NORTHEAST HOBBY CENTER

4825 Independence Ave. BE 7849

NEW JERSEY—HADDONFIELD

South Jersey's Complete Model Shop.
Largest Stock

Planes Engines Supplies
Open noon till nine daily

HIGHWAY HOBBY HOUSE

20 Tanner St. Haddonfield 9-6860

NEW YORK—BUFFALO

MODEL AIRPLANES—ENGINES—BOATS
HANDICRAFT—TRAINS—SUPPLIES
Open Daily Except Weds.
Evenings on Thurs. & Sat.

HOWARD E. RUTH

1466 Genesee St. Taylor 4126

NEW YORK—NEW YORK

In New York it's POLK'S
for all hobbies.
Come in and see us!

POLK'S MODEL CRAFT HOBBIES

314 Fifth Ave. BR. 9-9034

OHIO—DAYTON

Convince yourself!
Since 1928 folks traveled many miles
to shop our mammoth stock.
Open Sunday

GOOD'S HOBBY SHOP

1729 N. Main St. Taylor 5578

OHIO—LAKEWOOD (CLEVELAND)

Open Week Days 10:00 a.m. to 9:00 p.m.
Suns. & National Holidays 12:00 Noon
to 3:00 p.m.

Closed Thanksgiving, Christmas, New Year's

HOBBY ENTERPRISES, INC.

16302 Detroit Ave. Boulevard 2-1675

OREGON—PORTLAND

PLANES—BOATS—RAILROADS
RACERS—HANDICRAFT

VIC'S HOBBY SUPPLY

10 a.m. to 6 p.m.—Closed Sundays

1824 N.E. 40th Ave. GA. 3108

PENNSYLVANIA—GETTYSBURG

Model Planes—Motors
Railroads, Ships & Accessories
Open daily 7 p.m. to 10 p.m.
Sun. 1 p.m. to 10 p.m.
We Trade

GILBERT'S HOBBY SHOP

2 S. Franklin St. Phone 706-X

PENN.—PITTSBURGH 16, DORMONT

If it's worth selling, we have it!
TRAINS—PLANES—BOATS—SUPPLIES
MISC. CRAFTS
Open Mon., Wed., Fri. evens. 7:30-9

A. B. CHARLES & SON

3229 1/2 W. Liberty Ave. LO 1-3068

WASHINGTON—SEATTLE

GOOD SERVICE—HELPFUL ADVICE

Complete Stock
PLANES—BOATS—CARS—HO TRAINS
10 to 6 PM W. F. to 9 PM

BUZZ & DOUG'S HOBBY SHOP

701 E. Pike at Boylston EA 8650

FULL-SIZE PLANS

EACH SET OF 2 PLANS FOR 25c
EL DIABLO—TRI PACER & PLAY PLANE

(3 plans this mo. for 25c)

Also Available—

GEE BEE: One of history's greatest racing planes for U-Control fans. (Oct. '51 issue.)

RINGMASTER: Four years of development went into this fine stunt model. (Oct. '51 issue.)

LITTLE JOE: An easy to fly speed trainer designed by Harold DeBolt. (Nov. '51 issue.)

THE DRAKE: A realistic flying boat designed for small engines. (Nov. '51 issue.)

HALF WILD GOOSE: An extraordinary Half-A free flight that won 11 firsts during 1950 including its event at the Natls. (Dec. '51 issue.)

FIRECRACKER: A flying scale U-control model of a famous racer; excellent for team racing. (Dec. '51 issue.)

FLYING RAZOR: A high-flying AA-engined scale model of the Fokker D-8, WW I fighter. (Jan. '52.)

TRAVEL AIR: One of the greatest stunting scale jobs designed for engines up to .35. (Jan. '52.)

BEAVER: Sturdy, easy to build control line model of Canadian "bush" transport. For 19 to 29 engines. (Feb. '52 issue.)

ZENITH: Class A free flight winner at '51 Nats. Cabin type job designed by Sal Taibi. (Feb. '52 issue.)

Orders filled immediately and mailed out via 3rd Class Mail unless otherwise specified. For First Class postage add 6c and for Air Mail add 12c, for EACH set of TWO plans. Plans available only in groups of 2 as listed.

MODEL AIRPLANE NEWS PLAN DEPT.
351 Fifth Ave., New York 17, N. Y.
Enclosed is 25c for full-size plans of "El Diablo", "Tri Pacer" and "Play Plane".
Also 25c for full-size plans of "Gee Bee" & "Ringmaster".
Also 25c for full-size plans of "Little Joe" and "Drake".
Also 25c for full-size plans of "Half Wild Goose" and "Firecracker".
Also 25c for full-size plans of "Flying Razor" and "Travel Air".
Also 25c for full-size plans of "Beaver" and "Zenith."

Name (please print)

Address

City Zone State

were the two cheek cowl and the prop. These Williams brothers (Lawrence and Granger) can really put out beautiful all-metal Team Racers. We saw this job in the air a few times and it controlled perfectly. The glide was excellent and the speed was way up there. The finish would have made the proverbial fly break his neck. You surely deserved the beauty award, Lawrence.

Jack Elem of the Santa Ana Thunderbugs had a duo of Team Racers that were tough ones to beat in the beauty event. Ships were named Scooter Jr. and Lemon Drop, and were powered with the Mac 29 powerplant. Elem favors the 9-8 Power Prop as do many of the other T. R. fans. We've noticed that the ships have been getting better looking all the time. The F.A.S.T. Club has been stressing good looks much more than speed and has made up some new rules that will be tentatively used in 1952. The Heat races will be 21, 35, and 70 lap events. The laps were changed to cut down the advantage of the very fast ships. It's tough to get over 32 or 33 laps using "dynamite" fuel and that 35 lap race should cause the fast boys plenty of worry. The good looking ships are going to have still another advantage of the super speedsters. In 1951, the three fastest ships competed in the trophy dash. '52 will see the three best looking ships battle it out for the coveted trophy dash hardware. Better get out the sandpaper and mix it with plenty of elbow grease, fellows. Elem, Williams, and Russell and others may take all of the places in the trophy dash lineup.

To give you an idea of the Team Racing point standings before the last big race of '51, we've compiled the points of the first four men, as follows: first—Paul White, 631 pts.; second—Cliff Potts, 626 pts.; third—Jerry Gaston, 596 pts.; fourth—Granger Williams, 521 pts. After the last race, in which Paul White was plagued with troubles, the final tally was: first—Cliff Potts, 717 pts.; second—Jerry Gaston, 677 pts.; third—Granger Williams, 652 pts.; fourth—Paul White, 651 pts. It was interesting to find that Jerry Gaston won top honors in '50 and Granger in '49. This year these same two ended up second and third respectively. The '52 rules, in regards to the best looking ships being placed in the trophy dash, should get more of the scale builders in the act. Violet Hoyt has been giving the men contestants plenty of trouble in the jet and other speed events and has done very well in the T.R. events. Keith Storey informs us that there will be a woman high point trophy awarded to the woman contestant amassing the most points in competition for the year.

ADVT. INDEX—MARCH, 1952

A-J Aircraft Co.	1
Ace Products	48
All American Model Motor Exchange	48
Allyn Sales Co.	53
America's Hobby Center	6, 7, 9
Arnold & Fox Engineering Co.	43
Arnold & Fox Engineering Co.	48
Atwood Manufacturing Co.	40
Austin Craft Co.	44
Berkeley Models, Inc.	56
Carter Craft Models	50
Cleveland Model & Supply Co.	39
Comet Model Hobbycraft, Inc.	45
Consolidated Model Engineering Co.	46
DeBolt Engineering Co.	49
Dealer Directory	54
Doaling Brothers	8
Dura-Matic Products Co.	4th Cover
Dyna-Model Products Co.	42
Francisco Laboratories	48
Gotham Hobby Corp.	47
Gramophone Enterprises	55
Guilford, Paul K.	3
Gull Model Airplane Co.	52
Henry Engineering Co.	41
Herkimer Tool & Model Works, Inc.	51
Ideal Models	42
Junior Aeronautical Supply Co.	40
K & B Manufacturing Co.	3rd Cover
Kramer Brothers	55
Maxwell Model Supply Co.	55
Mod-Ad Agency, The	6
Mod Kraft Co.	42
Model & Hobby Industry	44
Monogram Models, Inc.	10
National Model Distributors	50, 55
PAL Engineering Ltd.	42
Pactra Chemical Co.	46
Perfect Quality Model Accessories	55
Plastic Wood	43
Polk's Model Craft Hobbies	48
Robey Specialties	43
Scranton Hobby Center	49
Shevlin Hobby Center	44
Spartan School of Aeronautics	55
Sig Manufacturing Co.	47
Speed-O-Laq Products Co., Inc.	8
Sterling Models	47
Strombecker-Becker Mfg. Co.	50
Sullivan Products	52
Super-Cyclone, Inc.	42
Tatu, Albert J.	42
Testor Chemical Co.	2nd Cover, 28, 29
Top Flite Models, Inc.	50
Western Model Distributors	42
X-Acto Crescent Products Co., Inc.	4

The females will compete right along with the men but their total points will be figured separately.

We've seen several meets in which the total times in either speed, stunt, free-flight, etc., have come out very close at the final point total. A letter from V. R. Duvery of Leeds, England, informs us of the closest competition in total times we've ever heard of. We quote, "Every year our Area runs a knock-out team competition among its member clubs (about 35 in all). Teams consist of three flyers who may fly one model each of any type. Rubber models unrestricted, gliders up to 300 sq. inches for tow-line, and power jobs up to 20 seconds engine run. Each makes three flights and the total time of each team's nine flights are compared, the highest being the winner (a five-minute limit rule applies). The first date on which the match was arranged turned out to be a day with howling gales and rain. Each team managed only five flights before all the models were wrecked and when they added up the total, it was found there was a dead heat. They decided to fly off at a later date and accordingly, fresh teams, one from Halifax in South Yorkshire and another from York, travelled again a matter of 25 miles each to Baildon, near Bradford (if you have an English suit, it probably came from there!) to fight it out once again. This time it was foggy, but both teams did their best. Models went out of sight in one to two minutes even though there was little wind. Finally all 18 flights were made and they added up each team's score. Believe me, as true as I'm riding this bike, it was another dead heat to the second! In desperation, the two team captains got together and decided to record the results of one more flight each. Ron Finch of York and John Magson of Halifax, flew it off, the latter making the higher time by a few seconds." It sounds unbelievable, but it happened! V. R. Dubery, our informant of the unusual event, is a member of the S.M.A.E. and is a well known rubber flyer. His 1951 best effort was in winning the "Flight Cup."

We learn from June Dyer that the North-

ern Council Free Flight Council begins its third year of successful operation; competition of Free Flights Clubs of Northern California will long be remembered. The Medford Prop Nuts of Oregon have added their name to the Council's roster. On December 2, a meeting of the N.C.F.F.C. was held at Sacramento to set up the schedule for 1952. New officers for the coming year were elected—President, Lee Ross; Secretary, Stanley Fadden; Financial Secretary, June Dyer. Hal Simmons, former President, and Tom Moore, Secretary-Treasurer, worked constantly during 1951 to keep everything on even keel. Plans are under way for a "Council" trophy (about three feet tall) to be awarded the Council Club which scores the highest number of points during the year. Individual high point club standings of the big three for '51 are: first, San Francisco Vultures—220 pts.; second, Elmhurst Prop Busters—173 pts.; third, Twin Cities Model Airplane Club—125 pts. At the present time, eleven clubs are on the Council's roster. Contest dates for '52 will be February 24, April 27, June 1, and September 21.

There is quite a discussion going on about the "fuse dethermalizer." Many of the modelers feel that a ship on an O.S.S. flight over dry country is a new type of incendiary bomb. True, under the right conditions, a fire could be started, and many flyers are steering clear of the "fuse." There is no doubt that the majority of the modelers in the f.f. category are using this type of equipment to bring their ships out of a thermal. The rubber men use this system almost exclusively. The method is very simple and almost no weight factor is involved. It would be very rough on the rubber modeler (Wakefield, for instance) to design a ship that would carry a timer device to trip the release for the stab, chute, or wing to allow the model to dethermalize, and still keep close to the 8 oz. weight. It looks like the "fuse" type of dethermalizer will have to be made much safer or the possibility of outlawing it completely may come to pass.

THE END

PERFECT TANKS

... are best!

Every Adaptable Size!



Priced from 39c to 69c



... so insist on "PERFECT" for "PERFECT" RESULTS!

Builders of "engine-powered" model aircraft demand "top" performance... and that's just what they get with "PERFECT"—factory guaranteed tanks!

Use "PERFECT" tanks in your next model for "PERFECT" results! You'll like "PERFECT" PARTS and "PERFECT" TUBING, too... ask your dealer!

DEALERS! INVESTIGATE... THE "PERFECT" TRIO for "PERFECT" PROFITS!

PERFECT

QUALITY MODEL ACCESSORIES

Kramer Brothers
Kramer Brothers
National Model Distrib.
Maxwell Model Supply Co. Los Angeles 15, Calif.
Gramophone Enterprises

Baltimore 2, Md.
Newark 2, N. J.
Chicago 14, Ill.
Dallas, Texas

IN THE AIR FORCE OR CIVILIAN WORK...

ONLY THE TRAINED MAN Succeeds IN AVIATION...

You can make a decision now that will save you years of time later. Get all the aviation training you can, before entering the Service. Then when you get out — while others are going to school — you will be employed on the job for which you trained and have every opportunity to advance rapidly.

WRITE FOR COMPLETE INFORMATION. Learn how you can use a few months now to save years later, when your time is far more valuable.



Maxwell W. Balfour, Director
Spartan School of Aeronautics Dept. MA-32
Tulsa, Oklahoma

Please send your free Catalog immediately.

Name _____ Age _____

Address _____

City _____ State _____

Indicate which of these branches interests you.

- | | |
|--------------------------------------|--|
| <input type="checkbox"/> Flight | <input type="checkbox"/> Instruments |
| <input type="checkbox"/> Mechanics | <input type="checkbox"/> Aeronautical Engineering |
| <input type="checkbox"/> Radio | <input type="checkbox"/> Airline Maintenance Engineering |
| <input type="checkbox"/> Meteorology | <input type="checkbox"/> Flight Engineer |

Spartan is approved for training under the G. I. Bill of Rights

SPARTAN

A UNIVERSITY OF AVIATION



SCHOOL OF AERONAUTICS
MAXWELL W. BALFOUR, DIRECTOR

COLLEGE OF ENGINEERING
ADDRESS DEPT.

TULSA, OKLAHOMA

ANOTHER STAR

IN THE

Berkeley
LINE

SNJ

NORTH AMERICAN T-6

(U. S. Navy Designation SNJ-5)
(World War Two A.A.F. Designation AT-6)

Complete Kit — **\$4.95**

Wingspan—31" $\frac{3}{4}$ " Scale—For "19" to "33" Engines

The "T-6" has been taught more people to fly than any other airplane. Hundreds of thousands of pilots who flew this plane will thrill to see this model perform. Beautiful to look at and easy to handle. With its stunt airfoil, it can do everything in the rule book.



\$5.95

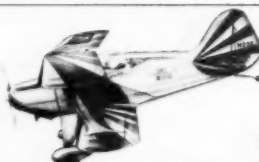
North American "P-51 MUSTANG"
37" Wingspan—For .19 to .36 Engines

Features retractable-extensible landing gear, throttle, flap, elevator and rudder control.



\$5.95

North American "T-28"
30" Wingspan—For .23 to .36 Engines
This new Air Force trainer makes a perfect stunt-scale design. Tricycle gear, pre-fab.



\$4.95

Betty Skelton's "PITT'S SPECIAL"
25 $\frac{1}{4}$ " Wingspan—For .19 to .33 Engines

Authentic pre-fabricated Controline design of the famous National Aerobatic Champion.



\$5.95

"MINNOW" Cosmic Wind
28" Wingspan—For .09 to .36 Engines
This 1 $\frac{1}{2}$ " scale Goodyear racer features "Step Keel" construction. Meets Team Racing rules.



\$4.95

Republic "P-47 THUNDERBOLT"
40 $\frac{1}{4}$ " Wingspan—For .29 to .65 Engines

Engine throttle control, fully automatic wing flaps, shear-pin mounts and die-cut parts.



\$5.95

CESSNA "195"
36" Wingspan—For .19 to .49 Engines
This beautiful 1" scale controline lightplane kit is pre-fabricated. Features "Step Keel."

CRYSTAL-CONTROLLED

"SUPER AEROTROL"

For reliable Radio Control Flying on 27 m.c.

- Backed by the most experienced builders of radio control equipment (over 4,000 Aerotrol Units to date).
- Proven by dozens of Contest Winnings.
- First to fly from dawn-to-dusk, landing only to refuel.
- Sold and serviced through local Hobbycraft Dealers.
- Super-Aerotrol has been tested under the Academy of Model Aeronautics special license in various parts of the country for nearly a full year. In addition "Super-Aerotrol" has been sent to England for tests on their license-free band. Here is what the experts say:

BILL WINTER—Editor of MODEL AIRPLANE NEWS says:

"Put together an Aerotrol Kit...the results were startling... worked right off the bat."

PETER CHINN—technical writer for "MODEL AIRCRAFT" of England says:

"In our experience this only thruster set reasonably free from trouble... the Aerotrol has always been known for its good performance... the (27 mc.) equipment was tested on its arrival from the United States and found to work perfectly."

WARREN BARTLETT—test flying Super-Aerotrol on Academy of Model Aeronautics special license KG3DA says:

"First flights peachy... receiver checked out perfectly adjusted."

Still Available!

DE-Aerotrol (for 52 mc.) Complete Kit—**\$22.95**
Includes Transmitter, Receiver, Escapement (less batteries and tubes).

XFG-1	Receiver Tube	\$3.50
3A5	Transmitter Tube	3.50
DE-105K	Escapement Kit	2.95



Crystal-Controlled

Super Aerotrol

TRANSMITTER

- Operates on 27.355 mc.
- Completely portable—Self contained—No separate antenna—No external Batteries!
- Weighs 3.5 lbs. complete!

Kit includes all necessary parts (except tube and batteries): Precision Ground Crystal; Painted Metal Cabinet; Finished Sectional Antenna; stamped and formed chassis with all holes punched; all necessary components, resistors, condensers, coils and chokes; color coded wiring. Can be assembled in less than two hours. Complete building and operating instructions are included —

Kit — **\$21.95***

DUST-CORE TUNED

Super Aerotrol

RECEIVER

- Operates on either 27.3 or 52 mc.
- NEW super-sensitive relay.
- NEW "locked-channel" dust-core tuning. (We have shipped the sample receivers across the country and to Europe without the frequency changing!)
- Light in Weight, 2 $\frac{1}{2}$ oz. less batteries.
- Simple super-regenerator circuit, 100% dependable.

Kit includes: Finished, tested sensitive relay; finished dust-core tuner; drilled bakelite base with condensers and eyelets attached; all electrical components, resistors, coils, chokes and potentiometer; all necessary contacts, and color-coded wiring. Can be assembled in less than two hours. Complete building and operating instructions are included

Kit — **\$13.95***

*Prices and specifications subject to change.



Berkeley's 1952 CATALOG...

25c.

Completely revised — up to date!
Contains complete line of kits,
Supplies, Accessories, Information.

SOLD THRU

BERKELEY
DEALERS & DISTRIBUTORS

If no local dealer is convenient, mail orders will be filled by Berkeley Models Supplies, Dept. MA., West Hempstead, N. Y. Please include 25¢ packing & postage.

TORPEDO POWER

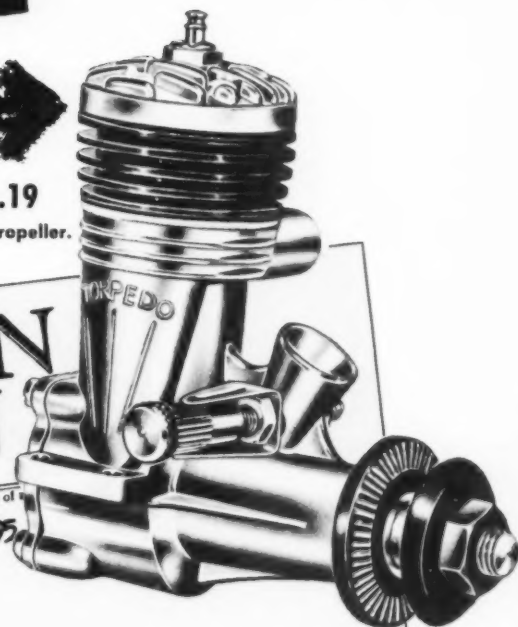
TO

UP

STEP

K & B TORPEDO .19

\$12.95 complete with propeller.



**WESTERN
UNION**

W. P. MARSHALL, PRESIDENT

rate
Cable-
less its de-
character is in-
dicated by a suitable
symbol above or pre-
ceding the address.

The time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of

LA174 OK189
O.WA161 26=WASHINGTON DC 11 255P=
K AND B MANUFACTURING CO=

224 EAST PALMER COMPTON CALIF=

NEW NATIONAL SPEED RECORD OF 131.33 MPH
IN CLASS A OPEN OFFICIALLY RECOGNIZED
BY AMA. PLANE POWERED BY K&B TORPEDO 19=

ACADEMY OF MODEL AERONAUTICS=



SUPERSONIC FUEL

Supersonic 1000 -Ultra Glo-Supersonic 100.

More power performance for every engine.

the greatest name in Model Aircraft engines

FOR FUN OR TROPHIES

Fly thru '52 with

**TORPEDO
ENGINES**



K & B Manufacturing Company • 224 E. Palmer Ave., Compton, California

DURO-MATIC

McCOY

The **McCOY** "9" Front Rotor Sport Engine

is fast becoming America's fastest selling and most popular favorite. Just right for beginner—

experienced hobbyists like its small size and realistic power. If you want to experience

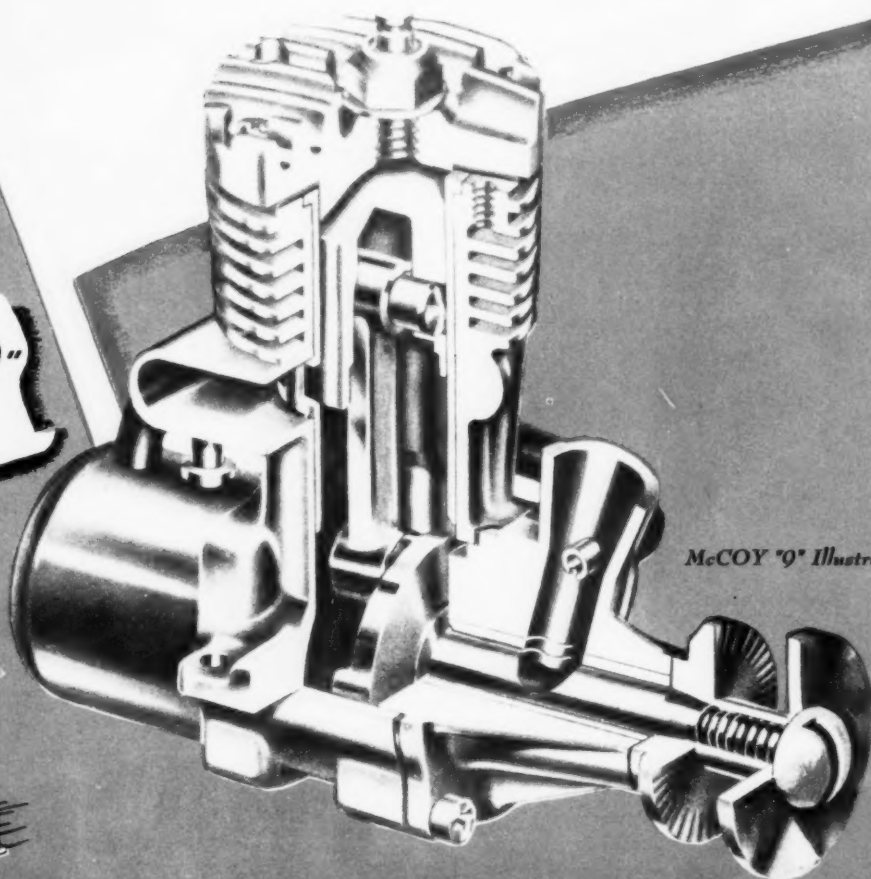
the real thrill of flying,

power your next model with a *Real McCOY*

Front Rotor Sport

McCOY "9"

\$795



McCOY "9" Illustrated



DURO-MATIC PRODUCTS COMPANY

8509 HIGUERA STREET, CULVER CITY, CALIFORNIA

